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Decision Making in Armored Platoon Command

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Klein Associates, Inc.

for

Contracting Officer's Representative
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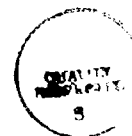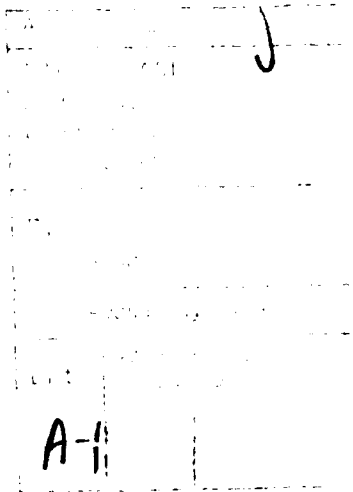
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This research studied command decisions during armored platoon leader training exercises. The Critical Decision method was employed to identify command decisions and the environmental features of decision situations offering a command challenge to the students. The student platoon leader, the trainer evaluating his performance, and one researcher all rode the platoon leader's tank and observed the events from the same perspective. A total of 57 decision points were identified and probed. The interviews collected direct contrasts between the more experienced trainer and the new student for the analysis of decision situations and factors affecting decision making.

The students deliberated during option selection in approximately half of the decisions. The students also reported relying on analogues to select their choice of options in close to half of the decisions, but the use of analogues ranged from helpful to disruptive in resolving decision situations. Option deliberation and analogue use as strategies in decision making by the novices were more frequent than in previous work with more experienced

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decision makers.,
     Poor performance by the students was consistent with their inability to imagine hypothetical situations, such as enemy actions and the relationship between friendly and enemy tactics. The findings suggest that performance errors were due not to a limited ability to monitor situational cues but to the misinterpretation of the cues. The results were contrasted to traditional decision-making literature. Training methods were recommended that would incorporate the implications of the study findings.

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DECISION MAKING IN ARMORED PLATOON COMMAND

EXECUTIVE SUMMARY

Requirement:

The failure of formal models to describe decisions made in natural environments has necessitated direct field observation of both novice and experienced decision makers in order to develop alternative decision-making descriptions. Approaches and programs for training, doctrine, etc., may be counterproductive if based on erroneous models. Researchers thought that decision-making skills could be improved by emphasizing option generation and evaluation, a suggestion based on previous laboratory experimentation with naive subjects, artificial time restraints and tasks, and impoverished decision contexts. These results have been incorporated in military doctrine and guidelines without careful review of their applicability to the military tactical environment. The research presented here investigated the validity of option generation and deliberation decision process models for describing how novices attain experience in armored platoon command. A primary focus was the novice decision makers' description of contextual cues present at the time of the decisions. Investigators constructed a representational system for the cues and topics related by the novice decision makers and compared them to reports of the same decision situations related by experienced instructors who had evaluated them.

Procedures:

Two observers interviewed three classes of Armed Officer Basics over days three to six of field training exercises at Fort Knox, KY. They identified decision situations and interviewed student platoon leaders twenty minutes after they completed the exercise scenarios. One researcher rode in the platoon leader's tank during the exercises and interviewed the student. The other interviewed the instructor who rode on top of the platoon leader's tank. Three types of data were collected from the students in the interviews: the type of decision situation and decision strategy used, the cues and knowledge available to the student during the time of the decision, and self-performance

ratings on tank and platoon actions as a result of the decisions. Instructors also reported cues and knowledge available and rated students' actions on the same performance scale presented to the students.

Findings:

The contextual cues and areas of knowledge students reported in their decision accounts were very similar to information offered by the instructors. This suggests that performance inconsistencies and failures were not generally the result of inattention to appropriate environmental cues but misinterpretation of the cues importance. Analysis of the students' decision strategies revealed two main methods of resolution: (1) limited option deliberation, and (2) recognition-primed decision implementation. These two methods were approximately equal in frequency. The students' high use of the latter type of strategy is consistent with our earlier research on more experienced personnel in other domains and supports the validity of a recognitional model for decision making at lower levels of expertise. The number of analogues reported by the students was fairly stable across the observed training period and demonstrate the proclivity of novices to use previous experience to guide decision making. Analogues were helpful about half of the time and on the remaining occasions were mixed ranging from not helpful to disruptive. Results suggest several additional training techniques to focus on refining students' ability to call up appropriate analogues in real time during the decision situation. Additional training would emphasize use of analogues to guide their decision making and to sharpen implementation of their procedural knowledge.

DECISION MAKING IN ARMORED PLATOON COMMAND

Introduction

This study is part of an ongoing series of projects on decision making in naturalistic contexts. The focus of these projects is to identify the types of decision strategies used by individuals with varying levels of experience. Our work has specifically attempted to determine the differences between novices and experts in their resolution of decision situations.

Most of the behavioral research in decision making has been done with restricted contexts and naive subjects, and for this reason the findings may not be easily generalized outside of the laboratory. Decision tasks investigated by established methods often involve a variation on a gambling task, with specified outcomes and associated probabilities. This framework does not seem to capture the situation in which there is an active search for clues nor does it reflect the dynamic nature of a task that requires constant monitoring and reevaluation over time. This apparent mismatch between formal approaches to studying decision making that involves static and well-defined events, and decision making as practiced in dynamic operational settings, is becoming increasingly recognized (e.g. Berkeley & Humphreys, 1982; Brehmer & Allard, 1986; Dreyfus & Dreyfus, 1986; Ebbesen & Konecni, 1980; Hogarth, 1982).

Within the last five to seven years, there has been a change in emphasis as researchers have begun looking at more complex real world decision tasks. David Woods (1984) and Jens Rasmussen (1985) have studied decision making in nuclear power plants. Ebbensen and Konecni (1980) have studied the courtroom, specifically how bail is assigned. Ranaan Lipshitz (1987) has examined military decision making, using retrospective accounts of actual incidents.

Our own work has looked at several different settings. We have studied urban fire ground commanders (Klein, Calderwood, & Clinton-Cirocco, 1986), wildfire incident commanders (Taynor & Thordsen, 1987), and design engineers (Klein & Brezovic, 1986). In attempting to model strategies, we also have been forced to abandon decision analytic types of descriptions, in favor of what Rasmussen has called rule-based skills. We have found a preponderance of cases where the decision maker relies on situational awareness, that is, the ability to immediately ascertain the important features of a decision situation and to derive the appropriate implications, in order to understand the dynamics of the problem. By recognizing the problem as a familiar situation the decision maker can identify the typical response. This response is then implemented. If there is time, it is first evaluated. Sometimes it is modified to reflect some unique aspects of the new task. Occasionally, it is rejected in favor of a less typical response. Rarely, the decision maker will have to reassess the entire situation. We have termed this

process a Recognition-Primed Decision to emphasize that recognition--a type of pattern matching--dominates analytical deliberation.

We have hypothesized that time pressure accentuates this approach, and that more experienced decision makers rely on their ability to size up a situation and act on that understanding. Therefore, we have tended to study experienced decision makers acting under time pressure. Our first effort was an investigation of decision making by urban fireground commanders (FGCs) at the scene of a fire (Klein, Calderwood, & Clinton-Cirocco, 1985). Our choice of data-gathering method for this study was guided by our desire to model as closely as possible the natural decision making of FGCs, while meeting the demands of scientific rigor. The method chosen was a retrospective protocol analysis based on the FGC's reconstruction of his step-by-step decisions and commands at an incident. Incidents were chosen on the basis of their having presented a command challenge, a criterion suggested by Flanagan's (1954) critical incident method. The fact that the reported incidents contained these non-routine decisions assured two major goals of the critical incident method--that recall of non-routine events tends to be superior to that of more routine cases, and that the most difficult cases will tend to reveal important aspects of expertise that would not otherwise be apparent (Flanagan, 1954).

The Critical Incident method developed for this initial study has now been further extended and refined. We have used the approach to examine the cognitive processes and strategies that surround decision making in several additional studies. More recently we have been able to directly contrast the decision strategies and situational assessments of experienced vs. inexperienced decision makers (Calderwood, Crandall, & Klein, 1987). This and other related studies have allowed us to test and refine a pool of techniques and types of probes that elicit detailed, specific information about the conscious processes and strategies that underlie real world decision making. The model of decision making that has emerged from this work has emphasized the importance of the rapid pattern detection ability of skilled decision makers.

In the present study, the Critical Decision method was adapted to the U.S. Army environment of armored platoon command. Fort Knox, Kentucky, is the site of armored platoon command training and as such offers a unique opportunity to contrast the decision making of novice commanders with the more experienced trainers tasked with evaluating the novices' performance. The present effort attempted to capture the differences between these two levels of experience in real time during the course of these training exercises.

A review of military manuals and guides was conducted to gain an understanding of the types of situations that the students would be encountering during these training events. During the course of the review, we saw much of the training material was also focused on specifying certain techniques of resolving decision situations. An examination of the techniques revealed a clear emphasis on analytic methods of resolving decision situations.

The tone and trend of many of the military training manuals strongly suggests that all command decisions be preceded by the careful process of critical feature extraction and deliberations. These features are then appraised via some weighting scheme. The end product of this preprocessing is a system of attribute-weight pairings that are then simply combined in some fashion to input into the next step of the analysis, that of option generation and evaluation. The Army War College (1983), as a typical example, describes these six steps in the formation of a commander's response to a decision situation:

1. Understanding the nature of the problem (effects desired and background of the problem)

2. Consideration of the characteristics of the area (includes geography, transportation, telecommunications, economics, political, sociological, and scientific/technological attributes)

3. Assessment of relative combat power (enemy, friendly, and force tradeoff comparisons)

4. Development of operational concepts (derivation of enemy capabilities and development of own courses of action)

5. Formulation of concept of operations (includes analysis of enemy capabilities, analysis of own courses of action, selection of preferred course of action, and translation of course of action into a concept of the operations)

6. Issues and policy (includes a reexamination of the concept of operations, identification of issues, and policy implications)

All of the above steps involve extensive analysis of problem features. The emphasis is first on a reasonably comprehensive search of relevant problem dimensions and then a careful (if not complete) analysis of the impact of the dimensions on the problem solution process. This entire process is time intensive, and time is a resource not in ready supply in tactical environments such as platoon command. Generally, only the planning and other

more strategic functions of higher level command can in principle afford this focus and level of analysis.

Attempts to translate the prescriptive decision-making models, prevalent in the strategic planning literature, to the tactical environment are insensitive to the possibility of insufficient time to resolve decision situations. One clear barrier to the uncritical adoption of a formal model to the tactical environment is the emphasis on identifying as many major problem dimensions as possible BEFORE executing any action. If this analysis were followed as typically described, the result could well be an untimely termination of command long before a response could be generated.

The Army War College supplement quoted above is respectful of some of these difficulties and offers caveats against uncritical adoption of the recommended sequential planning steps. Guarded statements on the importance of the judgment of the problem solver and the specific nature of the problem are offered. However, the problem resolution process outlined in the document is treated as doctrine to be followed in most cases. This operating framework was seen in other instructional guides down to the small unit level. The field circular relevant to the present study, FC 17-15-1 (Tank Platoon ARTEP Training Plan, 1984), incorporates many of the decision assessment procedures described in the War College supplement. The emphasis is again on situation feature extraction and analysis prior to action.

One example that perhaps best illustrates the incompatibility of this doctrinaire approach with the real events is the task described as 'Execute(s) Actions on Contact' (FC 17-15-1, 1984, pp. 6-35). The evaluation standard for this decision situation has as its first section: 'the platoon leader... determines the strength, composition, and disposition of the (opponent force) and informs the company commander immediately.' In live (simulated) combat, the platoon leader is more involved with the protection of his tank, the initiation of fire commands to both his platoon and his individual tank, and the search for alternate fire positions in the immediate area. There are serious questions on the time availability to begin a detailed search of the terrain for the number of opponents and to catalog the characteristics of the opponent along the above dimensions. In the duration, the platoon would be paralyzed for those several seconds that the platoon leader would need to complete even a cursory evaluation, long enough in real time to sustain serious casualties if not fatal compromise of the platoon mission.

It is curious that most of the formal models of decision making leave time at either a constant or as an identified but unaddressed limiting factor to a full decision analysis. One of the few models that have attempted to address this factor explicitly is the 'garbage can' model of decision making (Cohen,

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March, & Olsen, 1972). At first, the model focused largely on organizational decision making in large bureaucracies, but more recently the originators have tried to extend the generality of the model to military command (March & Weissinger-Baylon, 1986). It was a repeated theme in the military accounts collected in the book that the scarcity of time in military command forced choices to be made in an unanalytic fashion. Military veterans contributing to the book offered the more interesting accounts, as much for what they had not related about their experiences as for what they had. All of these veterans were involved in armed hostility.

Naval commanders in the book reported recalling specific previous events of their careers that explicitly guided their command decisions. Appeals to general command doctrine or detailed accounts of calculations undertaken to guide decisions were noticeably absent in their recollections of command. And, the specific events recalled to guide the decisions were not all successful in addressing the problems they faced at the time.

Augmenting this U.S. Navy perspective of armed conflict, a recent work by a U.S. Army captain (Bolger, 1986) offers additional support for the utility of recalling past events or analogues in the resolution of decision situations. Bolger was the commanding officer of B Company during one set of exercises at the Fort Irwin National Training Center (NTC) in California. NTC is one of the few areas in the military where training occurs against dedicated emulators of threat forces (threat in the current U.S. doctrine is defined as Eastern Europe Communist Bloc Armed Forces). In two weeks of combat manuevers, the units sent to NTC fight in as close to a real combat environment as safety allows. Reviewing the actions Bolger describes, the failure of any 'rational man' model of decision making becomes apparent. Instead, there is a reliance on past events to highlight certain options at the expense of others. Little time was spent during the exercises on the generation of a list of possible options, even an incomplete one. The commander of the task force routinely outlined what his plan objectives were and then tasked his subordinates with generating the operating details. As with the Navy officers, past events were recalled to guide decisions.

The conclusion one draws from these few accounts of military command in action is that there is little place for the careful reasoned approach, insensitive to time, that has been proposed as the model for human decision making. On the contrary, an inappropriate emphasis on the generation of options over the search for patterns in the decision environment seems a clear prescription for disaster. The description of decision making under time pressure we have studied emerge from our work avoids this time trap. Instead, the rapid pattern detection ability of skilled decision makers we have seen affords them the ability to

immediately relate a decision situation to something they have seen--and resolved--before.

Those particular features of a decision situation that are attended to, selected from the array of all possible cues or situational aspects, are arguably the essential factors in guiding the decision option selection. The focus of the current effort is to determine decision strategies of tank platoon leaders, and at contrasting these strategies for inexperienced and experienced subjects. To the extent that the strategies are guided by the local environment and the context of the demands of the decision situation, then we will be describing the nature of that awareness. Some of our earlier research depended on retrospective interviews, for events that occurred months or years earlier. We recognize that such data have limitations and uncertainties, (e.g. Nisbett & Wilson, 1977) and we have presented them as a source of hypotheses, not as proofs. In the current study, we have directly observed the incidents as well as conducted interviews soon after the incidents.

The opportunity to observe the events allowed us to verify the accounts of the actions given by the students and the instructors. We expected to determine how the students change their decision strategies over the course of the seven day exercise period, in particular the types of cues they reported from the early days of training to the latter days. If the students attain the ability to report similar types of environmental cues in similar frequencies to the instructors, then we expected to see an increase in performance ratings on those occasions. On those occasions where the students relied on past events to guide their decision option selections, then we hoped to record how the use of analogues related to performance.

Method

Subjects

Twenty-one students and nine instructors were interviewed. The students or the Armored Officer Basics (AOBs) came from three separate classes of second lieutenants who travel to Ft. Knox's Armor Platoon Leader Training Course to further their Military Occupation Specialty training. Student backgrounds were of three types: ROTC graduates (six), national guardsmen or reservists (six), or West Point graduates (nine). All students possessed undergraduate degrees.

The Tank Crew Instructors (TCIs) were responsible for evaluating the AOB during the exercises and completing an evaluation form for each student when the AOB held a command position (either as Platoon Sergeant or as Platoon Leader). All TCI's were noncommissioned officers, either Staff Sergeant or above, and typically had several years experience as a tank commander (from no fewer than five years to as much as 11).

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Educational background varied from high school graduates to a few years of additional undergraduate study. We were able to insure a degree of consistency in the reports we gathered by observing the same training team through two of the three data collection trips.

Procedure

The format for the interviews followed the guides attached in Appendix A. All interviews were taped and transcribed. In order to help orient the reader to the circumstances of the data collection, a short description of the field events and the researchers' roles follows.

Our field research team was composed of two members, one of whom observed the students and the other the instructors, from day three to day six of the seven day field training exercises. One researcher rode in the platoon leader's tank during the exercise, the other researcher viewed the events from the jeep of the lead trainer. This lead trainer, a captain, moved freely through the area to follow the course of the events.

The training schedule for each day was made available on each of the three trips. With the schedules, we were prepared for the types of problems being presented to the platoon leader in the training periods for the day.

The field training period for the cadets was arranged in two phases. The first three days were devoted to techniques of movement and specific offense or defense tactics and missions. The last four days were 'force on force' exercises, where one or two platoons of tanks would face another platoon in mock combat. Each platoon is generally given a clearly defined overall mission or field posture to implement, according to the trainers' lesson plans, but the platoon commanders are given latitude on certain parameters of execution. There were three exercises held per day, each lasting anywhere from 1.5 hours to 4 hours.

The format of each of these exercises or training scenarios was the same. First, the lead trainer would select the AOBs to be the platoon leader and the platoon sergeant for the upcoming scenario and then brief them on missions, radio communication protocols, etc. The lead trainer would then establish deadlines for the execution of the overall plan and time schedules for certain sub elements of the mission. The AOBs were then released to plan the execution of the mission; this activity entailed plotting terrain routes for the platoon to take, possible additional radio protocols or signals, and other such platoon coordination activities. They would then brief the other members of their platoon, go to their vehicles, and begin execution of the mission according to the timetable laid out by the lead trainer.

When the exercise had begun, the second researcher would accompany the lead trainer or team chief. The team chief would direct his jeep to crisscross the terrain where the scenario was taking place, often stopping for periods of time on the highest terrain feature that afforded a view of the entire platoon in action. Supporting this physical view of the events was the battery of three separately tuned radios that the team chief would use to monitor and interact with both the AOBs and the TCIs. The team chief acted as company commander for the cadets in the exercise as well as directed the development of events as head trainer to the TCIs. Ample time existed for the second researcher to probe the team chief's expectations for the events as well as identify decision situations that were challenging or difficult for the platoon leader.

At the conclusion of the exercise, the platoon would be directed to move to a location near the area of the events for an After Action Review (AAR). The review took approximately 20 minutes. During this time, the researcher who had ridden in the tank would attend the review and note the topics covered, identify the options mentioned to the courses of action taken, and note the guidance offered by the instructors to the students for similar situations in the future. In this way, it was possible to track the influence of the AAR on the AOB's later account of the events.

During the time of the AAR, the second member of the research team would be meeting with the TCI who had ridden on the back of the platoon leader's tank. The TCI was asked to identify those decision situations which were the most difficult or challenging for the AOB during the past exercise. When the TCI had finished this listing, he was asked to rank the decisions in terms of learning importance. The ranking criterion was selected to help identify the more crucial decision points for the AOB interviewer to cover in his interview with the former platoon leader in the short time available for that activity.

The amount of content overlap between the team chief's and TCI's list of decisions was a check on the validity of the technique. The interview with the TCI then began on decision points, in ranked order. The interview continued through the AAR and after, generally ranging from forty minutes to as much as two hours in duration. The decision point identification, rankings, and subsequent interviews were all tape recorded.

The ranked decision point list generated by the TCIs was used to question the AOBs. At the conclusion of the AAR, the researcher attending the review would meet with the researcher interviewing the TCI and copy the TCI's ranked list of decisions. The AOB interview would then begin. Roughly, 15 to 45 minutes would elapse before the next exercise would take place; the

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researcher observing the AOBs would use this time period to interview the student who had acted as the platoon leader during the previous exercise. The interviews were tape recorded.

Direct observation of the entire exercise allowed the researcher interviewing the AOBs to validate the student's account of the external events of a decision situation. This capability was an advantageous adaptation of the Critical Decision method to this study. Two other techniques were developed to further refine the method to this context. The first involved two related approaches to aid in focusing the recall process: time-centering and place-centering. In time-centering, an interviewer would describe the mission phases up to the point of the decision situation we wished to probe. Similarly, in place-centering we would describe the mission posture at the decision situation we wished to probe. For both of these to be less intrusive in the recall process, we took care to use only the terms given in either the original operations order (by the team chief) or those used by the AOB himself during his briefing to the tank commanders of his platoon. By describing in these general terms the physical features of a decision situation, we attempted to limit the possibility of the researcher biasing the recall process.

The second modification to the Critical Decision method involved an overt approach to performance evaluation often used in other behavioral research. For each decision point, we asked for performance ratings from both the TCI and AOB. There were two seven-point rating scales, one on individual tank handling and the other on platoon maneuvering. Both employed performance anchor points tieing the overall quality of a decision to the mission objectives. For the tank handling scale, a value of 1 was "(platoon leader's) tank in immediate danger, unable to complete the mission", and a value of 7 was "(platoon leader's) tank in best position possible to achieve the mission". The platoon performance scale ranged from 1="platoon in immediate danger and possibly unable to complete the mission" to 7="platoon in best position possible to achieve the mission". We found that this technique narrowed the description of the events and elicited specific performance judgments not contained in other probes.

The data collected from these scales were not as important as the focus that the question forced the AOBs and TCIs to adopt. In all cases, both TCIs and AOBs would justify their ratings on the two scales. These ratings invariably invoked a stream of event and environmental descriptions of what supported the number chosen. A short example: an AOB gave himself a '1' on handling his tank during a firefight and rattled off that: 1) he did not back his tank down and shift a couple of feet left/right between each round or two fired; 2) his position, where he chose to set up, was restricting his range to move around; 3) the identified

'enemy' were only platoon-size elements and therefore not likely
to survive the first bursts of fire from his platoon.

The Critical Decision method allowed three types of data to
be gathered for all decision point interviews: the decision
situations and option selections, the accounts or descriptions of
the events surrounding tne decisions points, and the performance
ratings. The most difficult data to organize for analyses were
of course the decision point descriptions. The accounts were
condensed and then formatted for analyses in the following
manner.

We began by simply categorizing the elements of the
situation that were mentioned by AOBs and TCIs. We first
condensed the transcripts made of the taped interviews in order
to more sharply focus on the elements specific to each training
scenario. Appendix B contains all of the condensed material from
each interview in which decision situation descriptions were
presented. Table 1 presents a sample listing of one of the
condensed accounts. The condensed accounts were then studied for
repeated themes or clusters of semantically related nouns. The
identification of elements was performed by noting environmental
cues that were used repeatedly, specific action patterns, and
topic areas repeatedly addressed. Table 2 presents the list of
16 categories.

The construction of these categories to describe the aspects
of a situation that a decision maker could recall served as basis
for the description of situational assessment (SA). Our final
summarization efforts were guided by the issues and concerns
raised in military history and current military doctrine. We
found that this framework of analysis served to highlight
important differences that underlie an expert and a novice
perspective on identical events in armored combat. We have
relied on this framework for analysis of SA throughout the
remainder of the study. The following is a description of the
final categories and examples.

Timing. Speed of an action's execution, mission phase
imperatives, evaluations of available time to execute an action.
(Example, cadet: 'Gotta call for smoke [artillery shell type]
ahead of time so it dissipates enough for when you need to get
through there.') (Example, trainer: 'With a mission of movement
to contact, you know the enemy's out there, you've got to be
pushing, constantly moving--you can't slow down and go into a
defensive mode.')

Tank control. Movement of the platoon leader's tank,
actions of the crew of a specific tank, fire plan for specific
tank. (Example, cadet: 'I didn't realize where we (the platoon
leader's tank) were in relation to the center (of the future
engagement area) until I picked up my head (from plotting

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Table 1

Example Situational Awareness Account Summary
[Decision Situation: Actions on Contact]

AOB	TCI
: were assigned this position, "not much choice"	: after first engaged, move to alternate
: pulled up too high first time, (TCI: "back down" suggestion)	- good enemy gunner could destroy platoon leader tank if no move made
: present position: clear shot for 3000 meters EXCEPT for little valley, big enough to hide tanks	: no movement at all on battle position
- enemy tried to use this valley to approach	- wasn't engaged yet but no reason to sit and watch
- NOT going to engage over 3000 meters anyway	: can't see entire engagement area, don't know where enemy is
: entire position covered	- don't know if enemy ready to engage
: terrain: flanks covered by trees, lake and trees	: could use indirect but danger of obscuring own platoon vision
- only access to rear	: when not moving, tank becomes a pillbox
: platoon formation real close, 25-30 meters apart	- no better target than a pillbox
- supposed to be 100-150 meters apart	: should move around so many times enemy would think multiple tanks there
: battle position not large enough to spread tanks out	: not much terrain on position to move around on, but 2 or 3 other spots to move to
: each platoon tank had berm to front	: have to back up
: road on left	- give enemy idea tank moved from that spot
- open area, enemy could engage tanks using road	- then can move back up to engage
: couldn't see platoon tanks across road	: could give signature from main gun, and still effectively engage
: priorities were making sure commander informed, using artillery, giving platoon fire commands	: if (platoon leader was enemy) on offense, then think opponent dug in somewhere - most likely on high ground to overwatch
	: platoon on high ground Rule: whoever gets to high ground first has advantage over adversary
	: enemy expects platoon to be on high ground

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Table 2

Situation Assessment Categories

Time
Tank - individual tank actions
Tank - hypothetical actions or assumptions
Platoon Control
Platoon control - hypothetical actions or assumptions
Friendly support elements
Friendly support elements - hypothetical actions or
     assumptions
Enemy Control
Enemy control - hypothetical actions or assumptions
Enemy support elements
Communications - up, down, and laterally in the chain of
     command
Communications - hypothetical actions or assumptions
Terrain
Terrain - hypothetical opportunities or assumptions
Mission
Training

artillery map coordinates).   (Example, trainer: 'He backed down
but not quite far enough, swung the tank to go over to west
portion--the extreme west, but he flanked himself' (exposed the
weaker armor of the sides of the tank.))

     Tank control, hypothetical. Possible alternative actions AT
THE TIME to the above, evaluation of possible alternative
actions, assumed tank control actions. (Example, cadet: 'The
driver and the gunner knew where we were going; I shouldn't have
had to direct the driver for the routes to take.') (Example,
trainer: 'Wouldn't have even let the gunner attempt to lay on
the enemy [put the main gun directly on target] on the first
round, just send a round down range, get the (enemy) to start
ducking.')

     Platoon control. Movement of the platoon, formation of the
platoon, engagement actions or fire tactics of the platoon,
platoon strength and safety. (Example, cadet: 'I wanted to
maintain visual contact with the platoon and I kind of forgot
about my (the tank's) front. (Example, trainer: 'At the primary
battle position, there was good dispersion of the platoon, but
the platoon leader's wing man was in a position which could not
cover the east flank.')

     Platoon control, hypothetical. Possible alternative actions
AT THE TIME to the above, evaluation of possible alternative
actions, assumed platoon control actions. (Example, cadet: 'We

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were on-line, good command, and control. If we had to stop, had
a breakdown, we were still covered.') (Example, trainer: 'He
(the platoon leader) was making a critical turn; if he went over
(the top of the ridge) without the rest of the platoon, someone
would have been lost (not able to find the trail) for sure.')

Friendly support. Actions and position of support elements
such as sister platoons on the mission or artillery support.
(Example, cadet: 'There was a scouting force in front.')
(Example, trainer: 'There was a covering force in front, with a
covering force it's a fairly good idea to do a hasty occupation,
they could screen what was going on.')

Friendly support, hypothetical. Possible alternatives to
the above actions AT THE TIME, assumed actions of the above.
(Example, cadet: 'Thought of calling for smoke, but just
couldn't get through.') (Example, trainer: 'The platoon set-up
not far from a pre-plot (artillery mission). If they had called
for that pre-plot, it would have come right in on top of them.')

Enemy control. Sighted enemy movement or locations, enemy
formations, enemy engagement actions, enemy strength. (Example,
cadet: 'I jumped up, saw enemy tanks in front of me so I laid
the gun around...') (Example, trainer: 'Had already made
contact with the enemy earlier, so you knew that the enemy was
there.')

Enemy control, hypothetical. Possible alternative actions
AT THE TIME to the above, assumed continuation of actions of
above. (Example, cadet: 'We knew where they were going to be,
behind the ridge was low ground, only place they could be.')
(Example, trainer: ' The only thing blowing the bridge did was
to slow the enemy down--they could still shoot over it.')

Communications. Radio information to be passed up to the
commander or received from the commander, or relayed to/received
from other platoons or platoon members. (Example, cadet: 'I was
working on getting a grid (map location for the enemy) in on a
spot report.') (Example, trainer: 'Should have called in to the
commander and let him know that that vehicle was out of action.')

Communication, hypothetical. Alternatives to the above
choices considered AT THE TIME, to all elements on the radio net.
(Example, trainer: 'Did have the platoon sergeant in that
particular area; the platoon sergeant does have radio
capabilities with the rest of the platoon and the company
commander.') (No examples from the students.)

Terrain. Any reference to the physical environment during
the time of the decision point. (Example, cadet: 'There was a
ridge behind the hill...') (Example, trainer: 'There was a road
to the front that was open...')

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Terrain, hypothetical. Alternatives to the above situational features, where the interviewee indulged in 'what if the terrain were different there' exercises; interviewee's expectations for the terrain. (Example, cadet: 'I was kind of surprised how close the trees were.') (Example, trainer: 'He [platoon leader] should have known they [the platoon] were bogged up, he had chosen an impossible route.')

Mission. Descriptions of the operation orders, or procedures inherent in the nature of the operation. (Example, cadet: 'That's SOP, when the enemy was in or beyond the kill zone then displace.') (Example, trainer: 'You never slow down while on offense, have to keep moving, pushing.')

Training scenario. References to the training program itself, or expectations of actions/events based on the recognition that the scenarios are for training purposes. (Example, cadet: 'There was a possibility that they [the enemy] were just backing down, but I knew they were another AOB class, I know now they run the FTX [field training exercises].') (Example, trainer: '...if the enemy had gotten outside of what [the cadet]had thought they were going to do, he would have suffered total defeat right there. A smart enemy. Here [the cadet] is just facing other students that aren't, you know, proficient with it, and they constantly do what's expected...')

The interviews with the TCIs and the AOBs were all summarized using the above format. Frequency of situation category use was recorded, and the type of decision situation that generated the descriptions was identified for later analysis. To examine the type of decision strategies used by the students, we used the following methods as adapted from our previous research in time-pressured decision making. No decision strategy analyses were performed on the TCI interviews. The TCIs were not personally in command of a platoon, therefore any description of decisions they executed or options they considered would be pure speculation.

Each decision point was conceptualized as the search for solutions to two logically distinct questions "What is my situation?" and "What am I going to do about it?" These questions can be translated for purposes of discussion into the two "sides" of a production rule of the form "if X then do Y". Many real world problems appear to have much more uncertainty involved with the X, or conditional, side of the equation. In such cases the decision is best represented as "If X do Y" but "If X2 do Y2." The decision requires coming to some determination about the actual state of the world, from which a general course of action is implemented based on experience or explicit procedural guidelines.

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A coding scheme was developed that allowed classification of each decision as primarily involving either X or Y deliberation or no deliberation. Of course, it is logically possible for a decision to have involved both X and Y deliberation. However, preliminary analyses of these protocols indicated that decisions could be classified as having primarily involved the X or Y dimensions, so this dichotomy was adopted as a simplifying assumption. Additional categories were developed for specifying whether or not the selection appeared to have been made by concurrently comparing and contrasting options, or by serially evaluating a workable option. Protocol analysis focused on coding each decision along these dimensions.

We limited the following analyses to those decision situations for which the AOB and TCI matched, i.e., both trainer and cadet addressed the same event(s). A total of 57 decision points were collected that fulfilled this criterion. The data are examined in the following order: situation assessment (SA) data, performance data, and student decision strategies and use of analogues.

Results

Situation Awareness. The differences between the AOBs and the TCIs with regard to their use of the situational aspect categories are presented in Figure 1. The general profile appears to be the same for the two groups. The numbers of categories used by the AOBs vs. TCIs were roughly matched over days. For the AOBs, this was 16, 20 and 18 on days 4, 5 and 6, and for the TCI it was 16, 17 and 19. The major difference was in the categories for hypotheticals. The TCIs always showed a higher proportion of hypotheticals for Enemy features, Platoon features, and Communications. Based on this clear difference, one interpretation is that the AOBs had less facility in representing future outcomes for courses of actions.

Turning to the types of categories used, there is good agreement between the TCIs and the AOBs. The correlations between category use frequencies, AOBs vs. TCI, are high: .75 for Day 3, .92 on Day 4, .97 on Day 5, and .96 on Day 6. This shows that the AOBs are generally able to be aware of the same things that the TCIs notice, and in roughly the same ratios. After Day 3 there seems to be relatively small difference between the two groups regarding their use of the different categories, so category usage counts are insensitive to the differences in the interpretations of what was attended to by both groups. This also strongly suggests what we are seeing is not a difference in articulation ability, but in which categories are receiving attention.

Although the TCIs were in general more likely to recall the hypothetical actions or situation features present at a decision

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Figure 1.   Situation Assessment Category Use Over Days
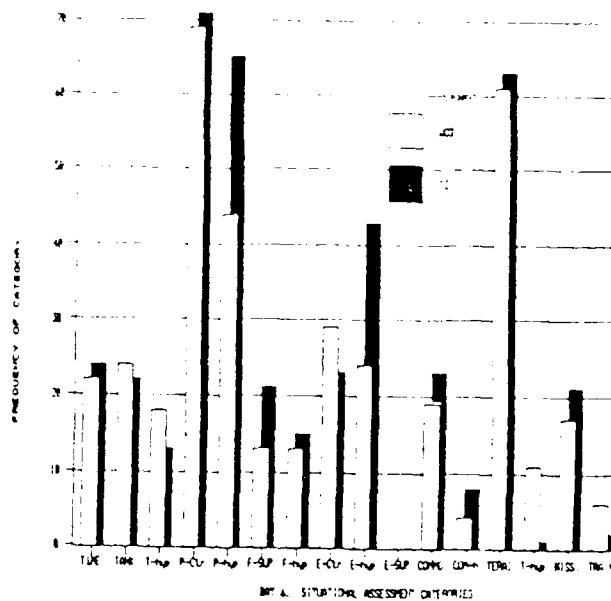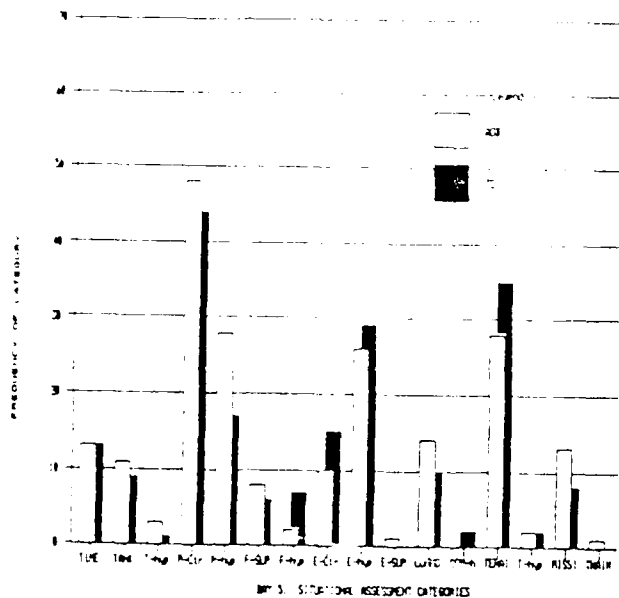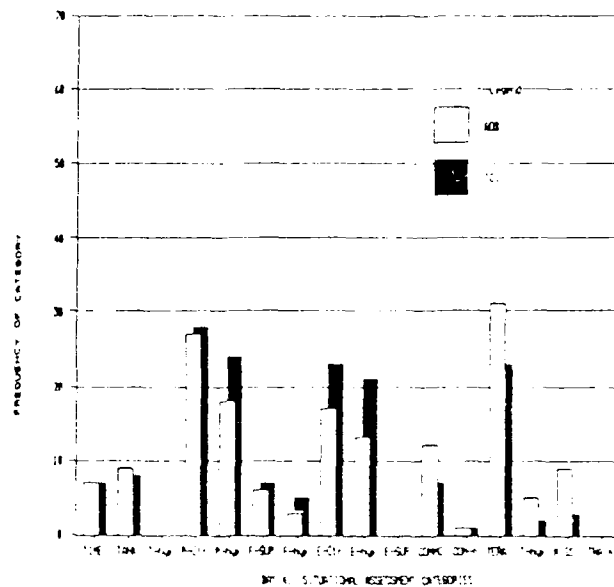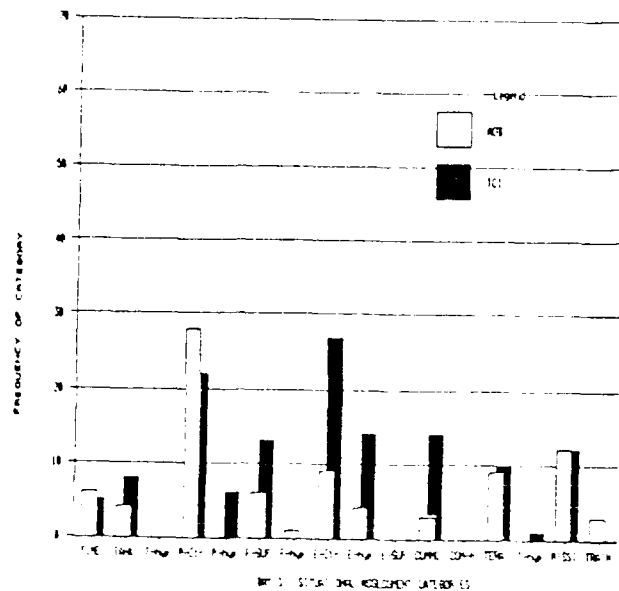
Time	= time
Tank	= individual tank actions
T-hyp	= tank hypothetical actions/assumptions
P-Ctr	= platoon actions
P-hyp	= platoon hypothetical actions/assumptions
F-SUP	= friendly support elements
F-hyp	= hypothetical friendly element actions/ assumptions
E-Ctr	= enemy actions

E-hyp	= enemy hypothetical actions/assumptions
E-SUP	= enemy support
COMMO	= communications
COM-h	= hypothetical communications
TERAI	= terrain
T-hyp	= terrain assumptions
MISSI	- mission
TRAIN	= training scenario

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point, the usage pattern was variable. On some days, AOBs would mention more hypotheticals than TCIs. For example, on Day 6 the AOBs show 18 mentions of hypotheticals regarding their own tanks vs. 13 for the TCIs, and on Day 5 the AOBs mention 28 hypothetical issues about their own platoon compared to 17 for the TCIs. On Day 6 the AOBs were much more sensitive to hypothetical issues about terrain (11 mentions vs. 1 for the TCIs). But the general trend is for the TCIs to show a much greater awareness of hypotheticals, in some cases almost twice as great as the AOBs, and this difference persists during the four days of observation. Table 3 shows the sum of all hypotheticals for the TCIs and AOBs across days.

Table 3

Pattern of Trainer and Cadet Hypotheticals Across Training Days

	Trainer	Cadet
Platoon (movement control and placement)	112	90
Enemy (movement control and placement)	107	67
Company (support elements' actions and placement)	27	19
Terrain (available cover and concealment)	6	18

It is interesting that for the TCIs, there were about the same number of hypotheticals for platoon as for enemy, whereas the AOBs were much more focused on platoon hypotheticals than enemy hypotheticals. They seemed less able to imagine how an enemy would react than to anticipate behaviors of their own platoon. In examining the report transcripts we saw that the TCIs were addressing platoon and enemy hypotheticals at the same time, e.g., 'if we position the platoon to cover the flanks and the forward area, then the enemy would need to move quickly through the center to attack our position.' The cadets on the other hand spoke of platoon movement possibilities in terms of completion of their required missions, and possible enemy response to these alternatives was not automatically a consequent consideration.

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Figure 2. Situacional Assessment Changes from Early to Later Training

EARLY TRAINING--DAYS 3 & 4: S.A. CATEGORIES

LATE TRAINING--DAYS 5 & 5: S.A. CATEGORIES

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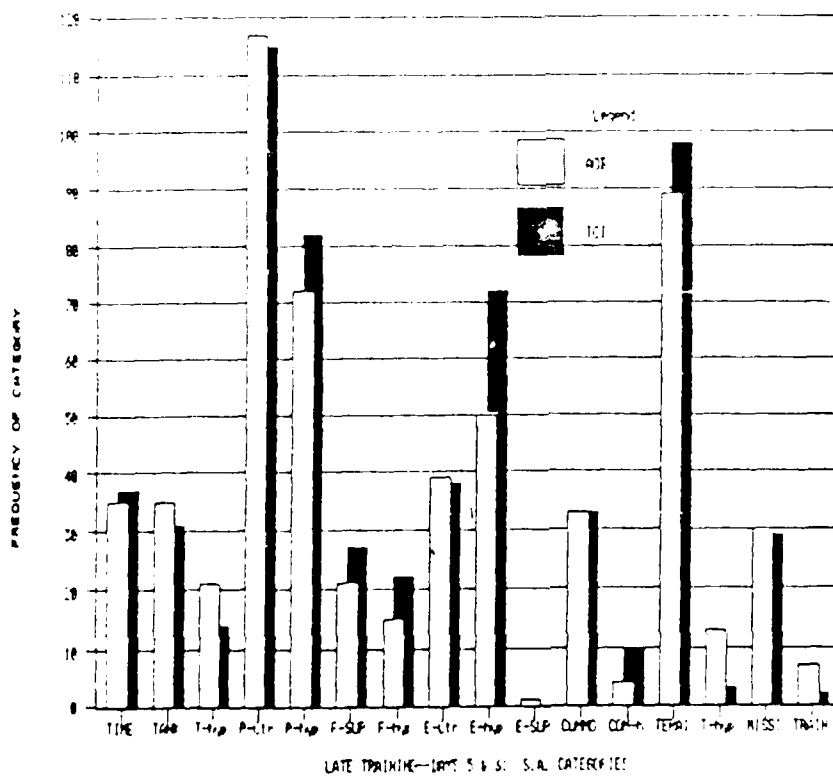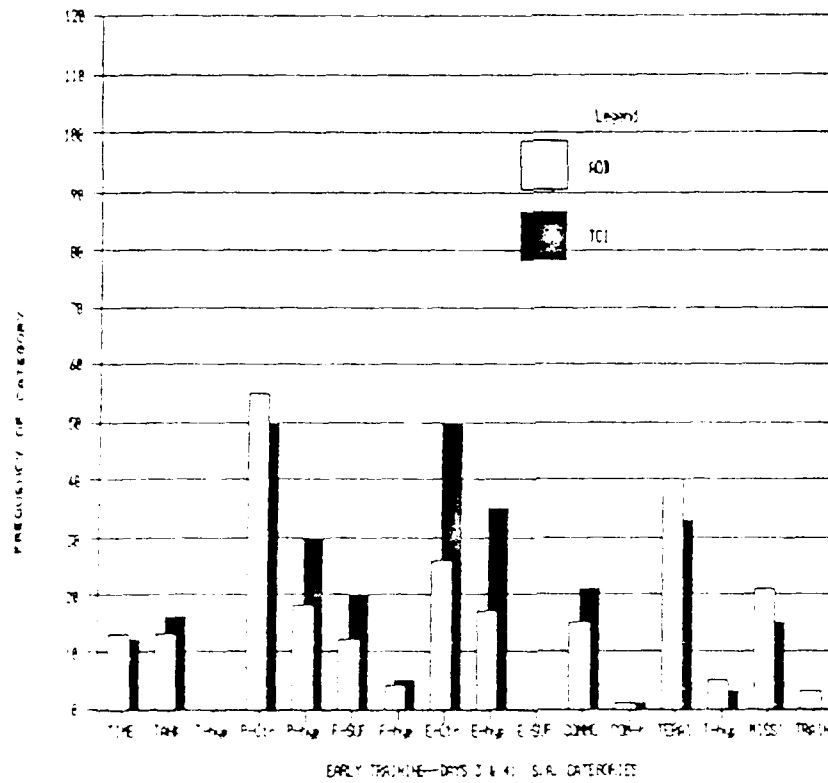
The difference in frequency of terrain hypotheticals between the two groups may reflect the fact that the TCIs knew the terrain so well there was no need to pose alternate expectations. When this recall pattern is examined with the data on enemy hypotheticals above, a broader view of the TCIs decision assessment strategies emerges. Specifically, their experience allowed them to be less concerned with the static environment (the terrain and given mission) and more aware of the dynamic environment (friendly or enemy force actions).

We have combined Days 3 & 4, and Days 5 & 6 in Figure 2, to sharpen the contrast in other areas. As seen above, the major differences are in the lower AOB sens tivity, versus the TCIs, to hypothetical activities of friendly forces (other than the AOB's own platoon), hypothetical activities of enemy forces, and hypothetical communications. The number of times these factors were used shows important differences between the two groups. By the latter days of training (days 5 & 6), these differences had remained although the number of references had increased for both groups. Of the real time topics, i.e. actions taking place or actual environmental features present at a decision situation, only friendly support had TCI references in greater numbers than AOBs regardless of training period. Some of the differences in cues used may be a function of the different training exercises used on Days 3 and 4 vs. 5 and 6. The more complex exercises would explain the greater frequencies for Days 5 and 6.

We were concerned that the nature of the scenarios determined the topics generated by the AOBs. One method of controlling for this possible error was to use the TCI topics use pattern as "ground truth" and present the AOB data as deviations from the TCI baseline. This allowed us to see where the AOBs were excessively or inadequately attentive, assuming that the TCIs were a reliable baseline. These data are presented in Table 4.

With scenario complexity controlled for, Table 4 shows that the differences between AOBs and TCIs in reporting situation aspects are robust. This analysis supports the trends identified in inspection of Figures 1 and 2, i.e., as training increased, the AOBs mentioned generally the same aspects of the decision situation as the TCIs. The exceptions to these trends were again the slow rate of increase in the recognition of hypothetical events possible in each scenario.

Given that there were few but important demonstrable differences in the decision situation accounts of the TCIs and AOBs, the next step in our analyses was to determine whether student performance ratings were impacted by these differences in situational assessment category use.

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Table 4

Percent Difference of SA Categories Use: AOB of TCI

	Day 3 & 4	Day 5 & 6
Time	110%*	96%
Tank	82%	116%
Tank-hypothetical	0%	220%
Platoon Control	115%	103%
Platoon Control -hypothetical		
Friendly Support	66%	98%
Friendly-hypothetical	30%	58%
Enemy Control	54%	96%
Enemy-hypothetical	46%	72%
Enemy Support	0%	0%
Communication	96%	114%
Communication-hypothetical	50%	50%
Terrain	113%	89%
Terrain-hypo	125%	600%
Mission	200%	122%
Training	(AOB=3, TCI=0)	200%

Sum of Reports in the Categories	AOB	TCI	AOB	TCI
	243	291	582	613

Sum of Decision Points Probed	25	32

*percentage derived by dividing number of AOB mentions by number of TC mentions.

Performance ratings.   Two performance rating scales were used in the interviews with the students and the trainers. The scales attempted to distinguish between cases where the cadet acting as platoon leader recognized a poor decision in the maneuvering of his tank and where he recognized poor platoon command decisions, i.e. the wider importance of the decision for

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the safety and success of the whole platoon on that mission. We expected the TCIs to rate the cadets' performance consistently lower on both scales for the following reasons. The experience that these trainers had in armored platoon movement, and with tanks in general, would allow them to recognize when a cadet decision was simply adequate versus when it was optimal. In other words, the TCIs would be more aware of the demands of actively controlling a platoon as well as the scope of the consequences for poor execution.

Figure 3 shows the mean ratings on the 50 of the 57 decision accounts for these two scales over four days, for both TCIs and AOBs. Seven decision points of the total 57 had incomplete or missing performance scores, due to insufficient time in the field conditions to include these probes in the interviews. From a general equivalency in performance evaluations by the AOB and TCIs on day 3, there is a small upward trend in the ratings on both scales.

The overall contrast in ratings between the cadets and their instructors was in the direction predicted. A more curious finding was the anomalously low ratings on day 5 from both the TCIs and the cadets. From the data on the decision descriptions above, and the decision strategies discussion that follows, there are few clear indications that a performance decrement had occurred on this day. We suggest one possible interpretation for this change. Since day 4 had been the first tests of live force on force actions, a simple execution of procedure according to mission may have been a 'good' exercise. Few attempts at additional exploitation of opportunity were reported (or witnessed). Instead, the emphasis on purely surviving the mission appeared to be in place.

The ability to extend the platoon's influence in the mission may have been the emphasis for day 5 to the end of the training period. From the decision accounts, we noted that the trainers placed emphasis on the interpretation of what the terrain or situation offered to BOTH enemy and the platoon. In contrast, the AOBs seemed to be fixated on how the terrain affected their own plans, regardless of effects on enemy or on other friendly platoons.

In other words, Day 5 was possibly the first time the cadets had to seriously engage in the tactical implications of force-on-force. The cadets' inability to address these implications resulted in lower overall platoon leader performance. If day 5 is ignored, we see a trend for the AOBs to feel that their performance improved from Day 3 to Day 4, without much improvement thereafter (i.e., they handled new tasks at the same steady state of performance). The TCI's tended to see the performance jumps as coming on Day 6. The above shift in performance criteria has not been confirmed through follow-up

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Figure 3. Performance Ratings Over Days

TANK PERFORMANCE RATING OVER TRAINING DAYS

PLATOON PERFORMANCE RATING OVER TRAINING DAYS

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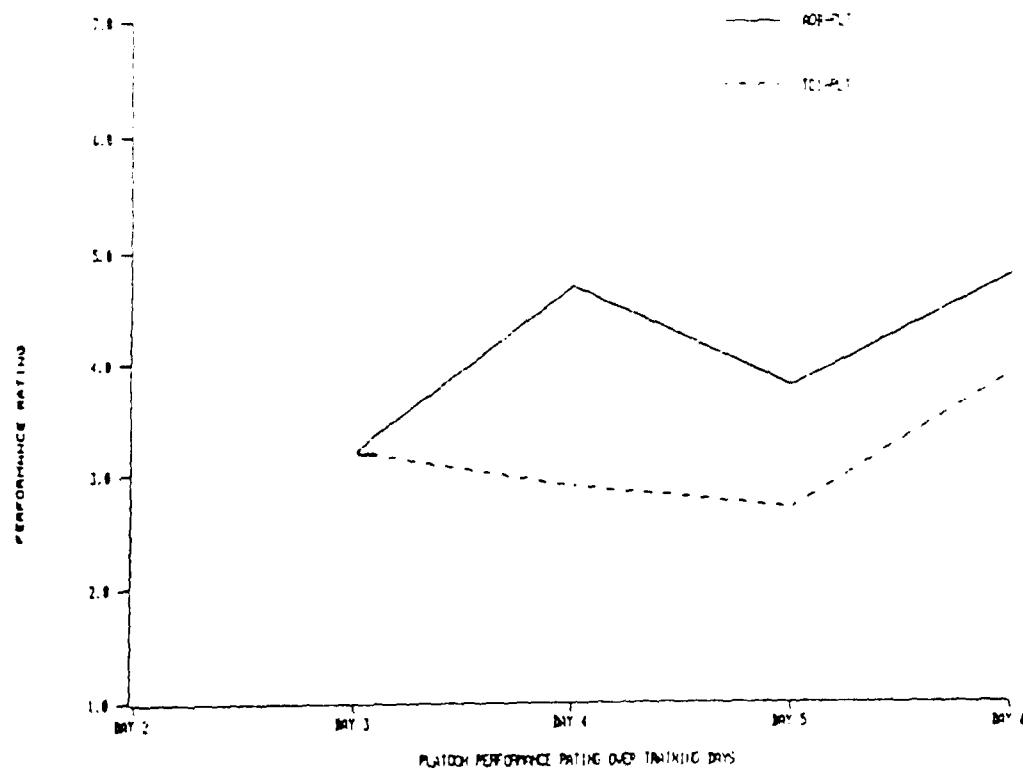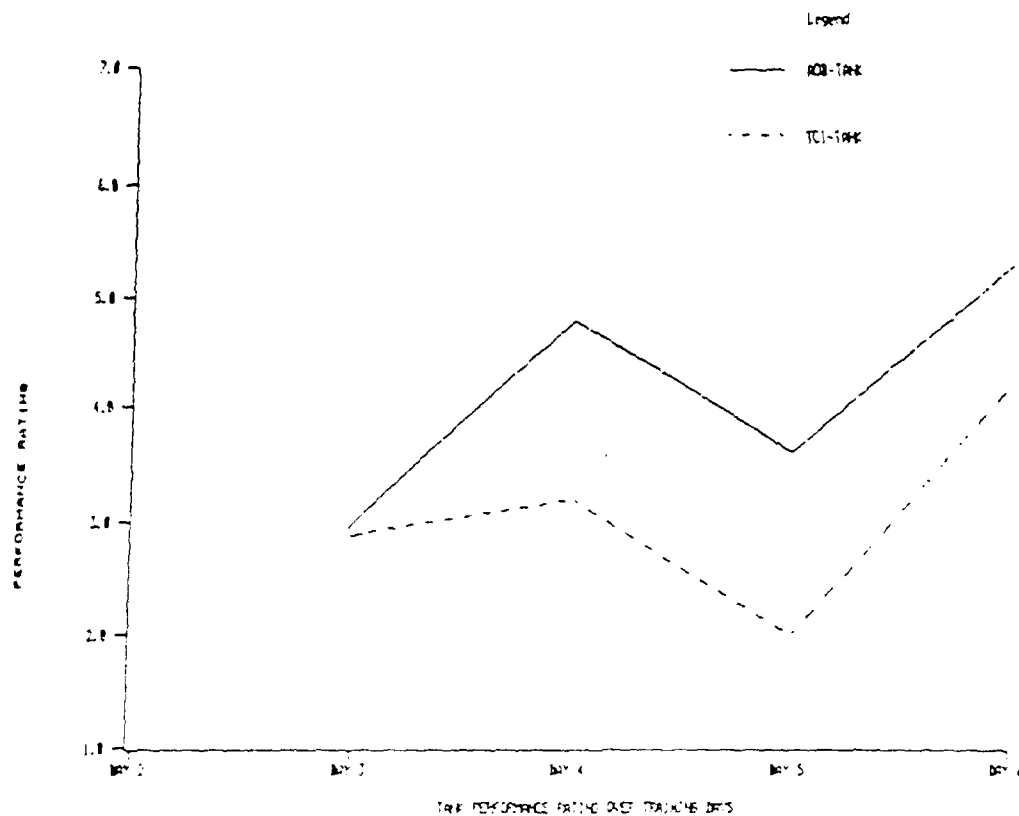
interviews, but the indication that a shift had taken place appears too strong to ignore. The shift, if real, does suggest that any straightforward interpretation of the performance ratings will be confounded by the TCIs expectations at that particular timeframe of the exercises. Any further examination of the rating differences should be undertaken with caution, but the overall trend for an increase in performance is nonetheless exhibited by our findings.

One interpretation of the small difference between the performance ratings of the TCIs and AOBs suggests that these two groups are viewing decision situations from rather similar perspectives. We have noted that the elements of a decision situation are recalled in equivalent fashion for the cadets and the trainers. If these situational cues are available to both groups, the next question becomes 'what are the strategies used in resolving the decision situations?' We examined the cadets' accounts to identify those strategies in the following section.

Decision Points. The 57 matched decision points collected in this study were those identified by the trainer riding on top of the platoon leader's tank through the exercise. A review of these decision points pointed out that there were identifiable repeated situations, across different students and across different days. Since the point of departure in all the cadet interviews were the decision points listed by the trainers, a closer inspection of the types of decision situations was made.

The first characterizations of the decision situations were focused on the external events. For example, one particular defensive mission exercise contained these type of events: platoon ordered at a specific time to displace, the platoon ordered to assume a specific formation for the displacement, tank allowed to stay on-line during the firefight, use of artillery or indirect fire during the displacement, and the specific time for the call for indirect fire. These actions were then interpreted in terms of the specific mission elements or mission phases that characterized the events. Our review of several military training documents revealed that the events we identified could be discriminated into learning tasks, subtasks, and standards of official military doctrine; these task stages were then adapted to form the 11 exclusive categories used in the following analyses of decision situations. The categories and frequency of use are listed in Table 5.

One analysis aim was to successfully capture the unique types of learning situations that the trainers identified as the most challenging for the cadets. Several categories in our list were not used more than once but are not subsumable into any superordinate group. Our inspection of these lone class representatives revealed that a set of extraordinary circumstances were involved in these decisions, which had

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Table 5

Types of Decision Situations Across Days

Type	Frequencies
1. Reaction to enemy indirect	1
2. Actions at checkpoint	5
3. Tank crew rescue	1
4. Actions on displacement	11
5. Actions on contact	11
6. Occupation of a battle position	6
7. Use of indirect fire	5
8. Avenue of Approach/advance	12
9. Planning for displacement	1
10. Technique of movement	3
11. Platoon control during bounding move	1

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significant impact on the success of platoon during those
exercises. For example, one platoon tank experienced mechanical
failure during a displacement, leaving it and the crew immobile
in a future kill zone. The company commander called to find out
what the platoon leader was going to do about recovering the crew
of the vehicle. In response to this query, the cadet switched
gears and ordered the platoon to go back into the kill zone to
attempt to pick up the crew of the disabled tank. The trainer on
the platoon leader's tank immediately overrode this decision and
pointed out the poor logic of putting three tanks--the remainder
of the platoon--in danger for the sake of one vehicle. The
trainer's recommendation to the platoon leader was to stay in the
overwatch position to cover the escape routes of the crew of the
disabled vehicle WHO SHOULD HAVE BEEN trying to get back to the
platoon's position in an expedient fashion.

Another case involved the coordination responsibilities of
the platoon leader's position. It was during an advance to
contact, where the platoon leader's section had reached an
overwatch position in the bounding overwatch movement and the
platoon sergeant's section was out of visual contact. The cadet
gave the platoon sergeant's section the signal that his section
was set, that they should move forward. The platoon sergeant
subsequently traveled too far out of the overwatch safety offered
from the platoon leader's position, putting the success of the
platoon's mission in jeopardy. The responsibility for the
monitoring of the entire platoon's actions rests on the platoon
leader, the trainer pointed out afterwards. The amount of time
taken by the platoon sergeant in getting to the next overwatch
position was the clue to the trainer that they were overextending

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the platoon's ability to protect themselves. In this example,
the platoon leader failed to monitor the progress of the platoon
sergeant's section and exercise his command and control duties to
reposition the section.

   As the students accumulated experience, one would expect the
types of decision situations identified as presenting the most
challenge to the student platoon leaders would change over a
period of days. What we discovered was that all of the decisions
we logged on the sixth (next to last day of training) were still
recognizable as decision situations faced in the earlier days of
the training period. Table 6 shows the decision categories we
collected.

Table 6

Types of Decision Situations by Day

		Frequency
Day 3	Actions on Displacement	3
	Avenue of Advance	1
	Actions on Contact	1
	Occupation of a Battle Position	3
	Reaction to Enemy Indirect Fire	1
	Actions at Checkpoint	1
	Tank Crew Rescue	1
Day 4	Actions on Displacement	2
	Avenue of Advance	4
	Actions on Contact	4
	Use of Indirect Fire	3
	Displacement Planning	1
Day 5	Actions on Displacement	4
	Avenue of Advance	3
	Actions on Contact	2
	Occupation of a Battle Position	2
	Actions at Checkpoint	1
	Technique of Movement	1
Day 6	Actions on Displacement	2
	Avenue of Advance	4
	Actions on Contact	4
	Occupation of a Battle Position	1
	Use of Indirect Fire	2
	Actions at Checkpoint	3
	Platoon Control During Bounding Move	1
	Technique of Movement	2

An inspection of the table suggests that the cadets were still experiencing difficulties in moving their platoon and their tanks on the last day of data collection. (At this point, it bears repeating that from the fourth day of field training until the last day the cadets were facing live opponent forces; the first three days were devoted to learning movement techniques against simulated enemy actions (colored smoke). Therefore, the sixth day of training really represents just three days of experience for the cadets in dealing with live enemies.) The objective of the training program itself may have had some influence on this pattern. Command decisions in an armored platoon may possibly be simple variants on a few basic themes. If this is the case, then these pure topic classifications do not reveal any change in the manner that the students handle the situations. To determine if any decision strategy changes have occurred, we probed the students to elicit features of the decision context and to identify the reasoning methods used during the resolution process.

In analyzing the decision point data, we used a classification that makes two types of distinctions. First, it distinguishes decisions based on recognition/reaction from those based on the generation and evaluation of 2 or more options at a time. The first type of decision is what we have called a Recognition-Primed Decision (RPD), a type of condition/action sequence such as "If X then do Y." The second type of decision fits the classical type handled by behavioral decision theory. Within this second type, we have further distinguished between decisions about the nature of the situation ("If X") and those about the best reaction ("then do Y"). That is, the decision maker could generate and evaluate alternative hypotheses about the nature of the decision point, and/or could generate and evaluate alternative options about how to handle the decision point. This 3-way classification is presented in Table 7.

The data show that only 42% of the decision points were handled using the RPD strategy. This low frequency was anticipated since the subjects were less experienced than any we have previously studied. The RPDs included cases where several options were considered, but were generated and evaluated one at a time. The decision maker was serially searching for a viable reaction, and was not trying to make a systematic decision.

We also included in the RPD classification those decision points that depended on timing; the situation was clear, and the reaction was obvious. The only requirement was to monitor the situation until the right moment to make the reaction. An example would be displacement, where the cadet had to monitor when the enemy was at a break point in the engagement area. When the enemy reached that point, the cadet had to recognize when an enemy force is at a break point in the engagement area and then

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Table 7

Classification of Decision Strategies

Strategy	Day 3	4	5	6	Total	%
Recognition-Primed Decisions	6	3	5	9	23	42%
Concurrent Evaluation of Situation	1	4	5	4	14	26%
Concurrent Evaluation of Reactions	4	6	2	6	18	33
Totals	11	13	12	19	55*	100%

*Of the 57 Decision Points studied two did not contain sufficient detail for classification.

radio for permission to displace. In another example, the sudden sight of an enemy tank in the engagement area automatically forces a response: wait for a second vehicle to appear and then commence engagement. The skills involved in these choices are first recognizing when the situation is changed and second knowing the option appropriate in the changed situation. Therefore, we considered TIMING decisions as RPDs unless there was some evidence of concurrent deliberation. This is consistent with our recent CD studies.

A total of 58% of the decision points were handled by concurrent generation and evaluation of options--the examination of two or more alternatives at the same time, looking for relative advantages and disadvantages. The proportion of RPDs was fairly constant across days.

We noted the as the training period progressed, the students began referencing previous situations in their descriptions of their actions at a decision point. One exercise that illustrates this point was a deliberate occupation that took place on the sixth day. The cadet positioned his platoon a primary battle position based on what he remembered of an attack through the area previously. Being familiar with the terrain, he chose to orient his platoon exclusively on a certain avenue of approach he remembered being used with success at an earlier time. Adding to this oversight was the cadet's purposive neglect of specifying return routes from the position to his platoon. The cadet

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reported that he and his class were familiar with the terrain, that he expected his platoon to exercise the appropriate judgment in route selection during the displacement.

A displacement activity is not generally carried out in leisure and platoon vulnerability is extreme, depending upon the direction and intensity of the enemy advance. These conditions emphasize the need for preplanning to avoid confusion and mission compromise. The TCI on this exercise was quick to point out that the terrain afforded a type of pincer movement on both sides of the platoon position, a possibility for which the cadet made no plans. The TCI also stated the cadet and his platoon would have been wiped out had the enemy been somewhat more clever than the cadet had anticipated. In a worst case scenario, the enemy could have flanked the platoon and an orderly displacement would have been impossible. The platoon would have had to both identify alternate routes back to the subsequent battle position as well as defend against attrition while falling back.

The fortunate outcome for this exercise, a successful initial displacement from the primary battle position, was more the result of the 'enemy' AOBs doing the obvious rather than any particular skill on the part of the cadet acting as platoon leader. That the TCI made repeated reference to this poor planning indicated that the simpler skills of platoon coordination on a battle position on day three was now replaced by an emphasis on contingency planning. The errors we informally observed from this and other such incidents on the sixth day suggest again that training expectancies had a qualitative shift over this period of days. The types of problems facing the cadets had not changed. Instead, their ability to plan for what most likely would happen AS WELL AS other possibilities were being evaluated on the latter days of the exercises.

Analogues. The example cited above showed the student relying on what he had seen before to guide his decision. We observed a large number of analogues in this study, more than in any of our other studies. The immediacy of our observations may have been a factor here. We observed each of the incidents and conducted the interviews within an hour, sometimes within 30 minutes. Table 8 lists the number of analogues reported. Included in the table is an evaluation of the effectiveness of the analogues in guiding the student, the judgment coming from the TCI's account of the events.

Of the 26 analogues, 14 dealt with terrain, 9 with platoon control, 1 with enemy movement, and 2 with communication. There was an average of one analogue for every two decision points.

There were 7 analogues for days 3 & 4, out of 24 decision points probed. For the last two days, 5 & 6, the frequency of analogues had almost tripled, to 19 out of 31 decision points

Table 8

Use and Efficacy of Student Recall of Previous Experiences to
Guide Decision Making

Day of exercise	Frequency of analogues	Utility of analogues
3	2	1 helped 1 disrupted
4	5	2 helped 3 disrupted
5	12	8 helped 3 mixed 1 disrupted
6	7	2 helped 3 mixed 2 disrupted

probed. One possible reason is that the cadets simply lacked the experience base on the earlier days. They did not have anything that could serve as an analogue.

How did they use the analogues, and how were they helped or disrupted? A full account of the analogues is presented in Appendix C. Some typical cases are:

"Well, I guess this is a prime lesson in how quickly terrain can change. We were out here about 15, 16 days ago, doing Mounted Land Navigation. And I traveled up and down that same course during that time and there was no problem that time. So I didn't take into account the changes the weather might have on the terrain. So I basically screwed up. thought if it was good then, it would be good now. So I decided on that route."

"I knew more than likely where they (the enemy) were going to be--had a defense there about three days ago. The ridge behind the hill was lower, was probably where they were going to be-- only place they could be."

What do we learn from these cases? It is clear that analogues are not uniformly facilitating or disruptive, and we should not expect that they would be. The purpose of training is as much to show the cadets how not to overgeneralize from analogues as to use analogues. They must learn which similarities are important and which are irrelevant or misleading. For purposes of training it is important that they

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try analogues that fail, in order to learn why. We can see over
the course of the four days we observed them that there was a
heavy use of analogues. In about half the exercises the
AOB relied heavily on an analogue for guidance. We can also see
learning about critical factors affecting the application of
analogues. We do not see a better use of analogues. On days 3 &
4, 3/8 analogues were helpful, and on days 5 & 6 10/19 analogues
were helpful, about the same ratio.

Conclusions

The decision point analyses were particularly striking. We
have not previously studied subjects with as little experience as
these AOBs, and the proportion of deliberated, concurrent
evaluation of options was much greater than in any of our other
studies. In our initial study of fireground commanders we
obtained 80% automatic RPDs, vs. 20% deliberated decisions.
Here, we obtained about 50% automatic RPDs and the rest
deliberated decisions. This confirms our hypothesis that
conscious deliberation is what people do when they lack the
experience to recognize the situation.

The analysis of situational awareness showed that the cadets
and the TCIs were quite well matched in terms of the range of
factors to which they attended and to a lesser extent the
frequency of use of these factors. So the limitations of the
AOBs were not due to their inability to notice cues. Their
problem was in the realization of linkages, of the way the
conditions could interact to impact their performance. Previous
experience with the exercise scenarios helped them prepare for
certain familiar situations, but their attentions on similarities
also hurt them in underestimating the contingencies of a problem
approximately half the time. The focus on those aspects of a
situation that appeared similar to other situations did, however,
aid them in recognizing a subset of the type of contingencies
that their instructors typically addressed. Some few examples of
hypothetical enemy reactions were shown to be considered, but the
majority of the "what if" scenarios the students posed involved
their own platoons and the terrain.

The ability to pose just the enemy hypothetical
relationships would have given the students an increased chance
for survival. We saw the majority of decision situations
involving enemy contact resulting in student 'deaths.' The enemy
hypothetical category frequencies collected from the TCIs in
these cases showed the superiority of the instructors in
anticipating enemy reactions versus the students. The AOBs have
trouble with these hypotheticals, particularly the interaction of
hypothetical friendly actions and enemy actions. They could not
anticipate the future, what to expect. Again, there are no rules
or shortcuts to experiences that allow them to build up
prototypes and expectancies. In short, the AOBs lacked the

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prototype base that would enable them to rely on RPDs. Instead
they had to think out many decision points, ofter stopping to do
so, and getting killed by their TCIs who kept drumming it into
their heads that you cannot stop to think on a battlefield. As
the students gain more experience, we would expect them to begin
to approximate the situation assessments of their instructors, to
show a large drop in the terrain analysis and a greater parity of
platoon and enemy hypothetical scenario considerations.

It could be argued that recognition is less likely in
complex situations, since these require some analysis. However
it may be that people are less likely to have experienced the
complex situations, and therefore forced into analysis.
Certainly the decisions facing our fireground commanders were not
simple. The decisions facing the tank platoon leaders were
complex, and the AOBs responded by analyzing strengths and
weaknesses of different options only half the time. But in the
interviews we found that the TCIs had no trouble recognizing what
was going on and which reaction was called for.

We have attempted to formalize the representation of SA.
Figure 4 shows a schematic diagram of the elements of two
decision situations. The schematic is reminiscent of the case
grammar developed by Fillmore (1968), and it shows the contrast
between the AOB and the TCI. The schematic shows the cycle of
situational aspect category use that both students and
instructors went through at particular decision points. Another
format we used is presented in Table 1 and in Appendix B. This
is the side-by-side comparison of the SA for the AOB and the TCI.
The purpose of these was to show what the TCI was attending to
that the AOB was not.

We believe that these forms may have merit for purposes of
communication about SA. The results of the SA analysis suggested
that attending to the right situational features is not
sufficient, i.e. not matched by an increase in performance
quality. To help students draw the appropriate inferences from
the features they are recognizing, the following simple exercise
might be helpful: present data such as Appendix B and let AOB
identify what the TCI was seeing vs. their own interpretation.
Bloom and Broder (1950) have used such a self-generated
evaluation with school children, to good advantage.

How do these results compare to the standard expert/novice
studies such as Larkin, McDermott, and Simon (1980) and Chi,
Feltovich, and Glaser (1981)? Our present analyzes were not
sensitive to the use of specific cues and the organization of
cues, but our experience suggests that in all these studies the
experts and novices were trying to do the same thing. The
differences were not in the strategies used, but in the content
known. For the student platoon commanders, we saw that an

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Figure 4.   Schematic Representation of
Advance to Contact

AOB

mission

analog ← terrain

execute   (route
            selection)

tank

platoon control

friendly
hypothetical

analog ← terrain

enemy
hypothetic.

TCI

mission

time ← terrain

execute

(speedy
advance)

platoon control

enemy
hypothet.   commd

enemy
hypothet   terrain

friendly
hypothetical

execute

platoon control
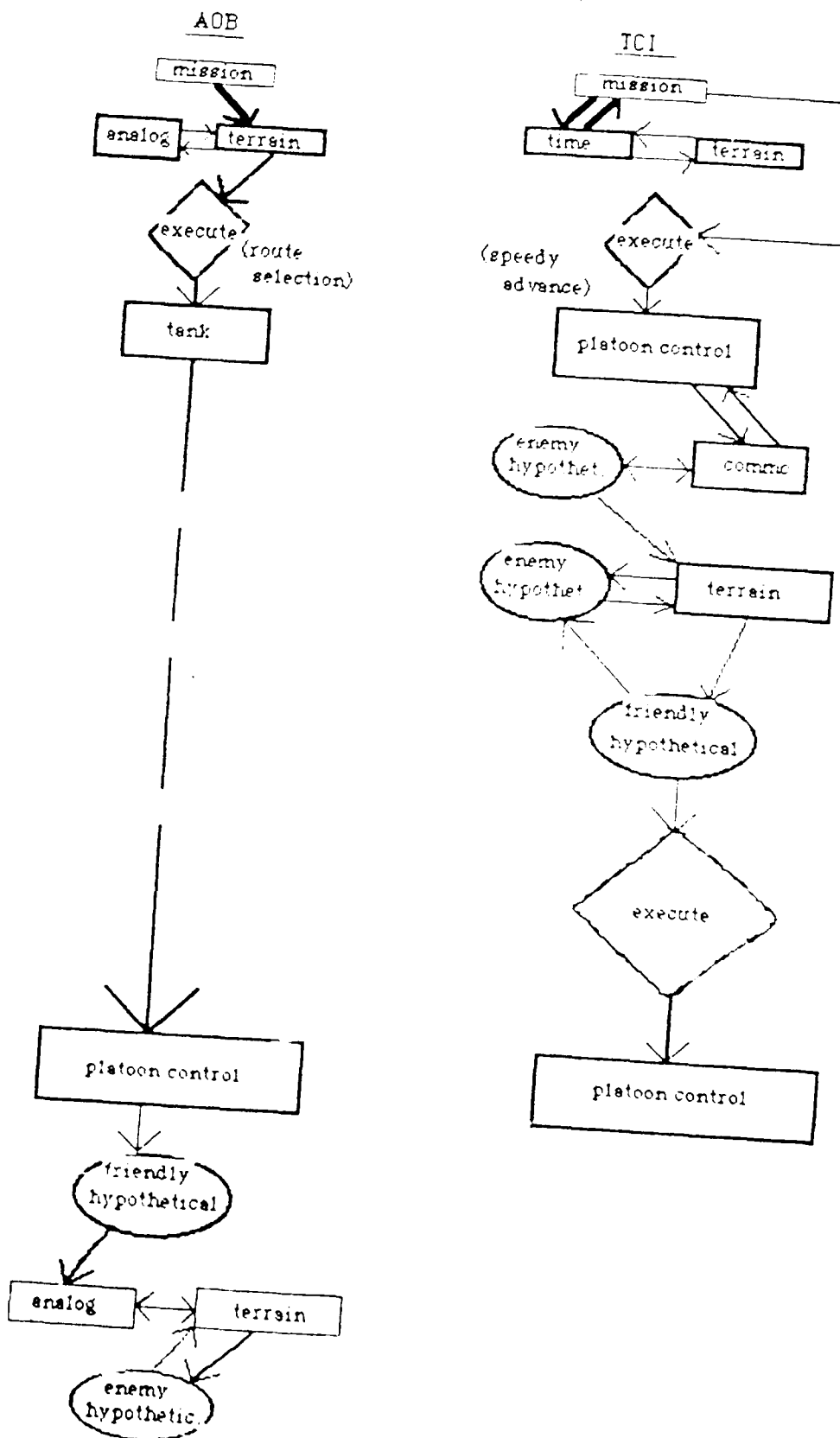
increase in experience from day 4 to day 6 was not matched by the ability to derive certain implications, and this is what impaired their performance.

This conclusion is significant in that it means that we should not be trying to formalize better strategies to teach the novices. The traditional goal of teaching general purpose prescriptive decision strategies, such as option generation and analysis, has implied that for a small investment, i.e., the training of MAU techniques, large and generalized gains would be realized. This approach held the promise of providing powerful decision making skills across different domains. Attractive as this goal was, it has not been demonstrated as necessary or desireable in this study.

We have seen that the cadets were having trouble decentering (to use a Piagetian term). They could not take another perspective. They could not position their platoon because they could not anticipate what the other tanks could see of the battlefield. They could not imagine how they looked to the enemy. There are no tricks here. They have to gain enough experience in seeing multiple positions for themselves before they can anticipate how others would see them.

Although this study did not undertake to examine training, certain implications can be readily seen. There is a general need for training in decentering. This is seen in the cadets' continued inability to use indirect fire well (they cannot visualize artillery units waiting to help them), consider neighboring platoons, or enemy goals. They do not make good use of scouts' reports on the enemy, or about scouting actions in general. For example, they do not interpret a report of scouts falling back as a sign of an enemy advance.

One situational feature consistently missing in the students' SA accounts is the quick and accurate recognition of time and space relationships. We did not see much of a drop in mistakes due to poor tracking of timed decisions. Example: Day 3, the AOB reported enemy advancing slowly, perhaps a kilometer every five minutes. The TCI felt that enemy routes were good for speedy advance and AOB erred in not displacing sooner and calling for indirect fire cover. On Day 5, the AOB observed that "enemy was not on my tail, I won't be shot at. The enemy can't be over the ridge yet." The TCI reported that "Enemy had to come over the top of the former battle position, they could see all the way down to the woodline the AOB was paralleling." The mistake was in not using the routes in the woods to preserve cover and concealment, and misjudging speed of enemy's advance.

There is a general theme in our data of the cadets not appreciating speed and direction of change. It is hard enough to

handle first order systems (e.g., simple speed). Second order
systems are truly beyond the students (rate of change in speed).
Complicating this relationship is that they are dealing with an
enemy intent on deceiving them. Training here could involve
films and videotapes, teaching cadets to estimate timing issues.
The TCIs could film tank advance rates at varying speeds, expose
the cadets to these scenes and have them estimate the approximate
distance traveled and locations of the tank. The training
scenario should be set up like this: The starting positions for
the tanks in the film would be given in terms of a map each cadet
would have. These maps would also hold overlays for particular
missions.

The filmed tanks would be shown, the film stopped, and the
AOBs would be guided in assessing the probable location for the
tank if it were to continue its movement on that terrain. The
objective here would be the assessment of platoon responses to
the challenge these filmed tanks would pose, not so much in
improving the ability to estimate target movement velocity. Some
distortion would occur, but this fcin of specialized training
would be inexpensive and more exercises could be accomplished in
a given period of time. As a side benefit, these drills would
offer increased opportunity to practice map reading and platoon
tactics. We noted informally that another problem area for the
cadets was map grid and terrain coordination. The TCIs always
looked out and referred to things as being north, south, etc. of
reference points whereas the cadets typically used terms like
right or left.

As stated above, we believe that there is a need for
familiarizing the AOBs with: reading the situations and
anticipating the outcomes, developing a base for handling
hypotheticals, and applying imagery. Generally this is what the
exercises are accomplishing. This would be difficult or
impossible to do in the classroom. To some extent, it can be
provided via simulation, but we realize that any simulation will
not provide the full cluster of concomitant clues to learn how to
see what is going on.

The training program presently is well directed to providing
the experience base on which prototypes will be synthesized. The
training manuals put a lot of emphasis on procedures. In some
cases this may be excessive since context determines which
procedures and when to reject the book advice. But the drill in
procedures is generally necessary to start the instruction of
beginners.

Over the course of training, we saw improvements in the use
of procedural knowledge. Radio protocols improved. The AOBs
learned to make much better use of terrain. They made good
progress in movement (speed and mobility). On the other hand,
they were still jerky in making transitions, stopping to re-

organize the platoon. They never learn the procedure of backing a tank up after firing, to change location. They appeared stuck in a video arcade mode, continuing to shoot "what's on the screen" rather than seek safety. Finally, they do not master tricks such as pre-planning use of artillery so as to avoid having to code terrain map coordinates during the exercise.

In the recognition of these failures and throughout the study, the Critical Decision method was again useful. We applied it differently in this study, focusing more on situational awareness rather than on decision strategy, but we feel that the type of data that we obtained is quite informative in showing how the cadet's understanding differed from the instructor's. We conclude that the investigation of situation assessment will not be amendable to generalized formal decision research methods. Our findings would not have been at the level of detail we achieved without a reliance on and sensitivity to specific decision situations. Additional work with the Critical Decision method may provide the sharpest insights into the nature of expert-novice differences in real world settings. The collection of such data can clearly assist in the education of neophytes of any field. The guidance given by these data can aid in the construction of those decision aids which stand the best chance of adoption.

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APPENDIX A

INTERVIEW GUIDES

TCI (Platoon Leader tank) Probe Guide

FTX/STX #/description:

INTERVIEWER:_____   Platoon:_____

Part I: Pre-AAR Probes

1.   What do you think were the most difficult/challenging decisions
the AOB faced in this exercise? Select the most challenging.

     (Obtain sufficient mission time and platoon execution anchors to
pass off to the AOB interviewer)

2.   If you had to rank these decisions in terms of learning
importance, how would you rank the decisions you have just given me?

     (List the ranked decisions, with brief mission anchors. Obtain
sufficient descriptions of the decisions to inform the AOB
interviewer.)

          --------------hand off to AOB interviewer-------------

FOR EACH DECISION POINT:

1. WHAT did the AOB DO? Suppose you had to describe the situation of
this decision to a friend of yours. What would you say to him in 25
words or less?

2. If you with all your experience had done exactly what the A.O.B did,
how would you RATE yourself on handling:

     a) your own TANK on this seven point scale?

```
1          2          3          4          5          6          7
!----------!----------!---------!----------!----------!---------!
very poor,                    tank able to                  tank in
tank unable to                proceed with              best possible
or not in the                 mission but                position to
position to                   not in best position      complete the
complete the                  to complete the             mission
mission                       mission
```

     b). on handling the PLATOON on this seven point scale ?

```
1          2          3          4          5          6          7
!----------!----------!---------!----------!----------!---------!
very poor,                    decision of                   Platoon
platoon unable                some consequence              in best
to complete                   to the speed and           position to
mission                       quality of the             complete the
                              achieving the                mission
                              objective
```

3. Were there any OPTIONS available to what the AOB decided?

4a. (TCI as PL)...what would you have done?

 b. If you had to be in the EXACT SAME POSITION as the AOB was,
    ...HOW would you REFINE what AOB did?

5. What were you AWARE OF--KNOW--UNDERSTAND that would have led you to
do what you said you would have done?

6a. What would have made you NOT DO this (this = #5)?

 b. This being the case..what would you have done?

 -
Return to next decision on rankings list and repeat questions #1--6b.

AOB (Platoon Leader tank) Probe Guide

FTX/STX #/description:

INTERVIEWER:_____   Platoon:_____

Describe the first decision situation identified by the TCI in the ranked order list as received from the TCI researcher. Focus the recall process by mission phase or terrain location descriptions of the decision situation.

1. WHAT did you (AOB) decide here? Suppose you had to describe the situation of this decision to a friend of yours. What would you say to him in 25 words or less?

2. If you had to rate yourself on what you did, how would you RATE yourself on handling:

    a) your own TANK on this seven point scale?

```
1          2          3          4          5          6          7
!----------!----------!----------!----------!----------!----------!
very poor,                  tank able to                tank in
tank in immediate           proceed with                best possible
danger, not able            mission but                 position to
complete the                not in best position        complete the
mission                     to complete the             mission
                            mission
```

    b) on handling the PLATOON on this seven point scale?

```
1          2          3          4          5          6          7
!----------!----------!----------!----------!----------!----------!
very poor,                  decision of                 Platoon
platoon in                  some consequence            in best
immediate danger,           to the speed and            position to
not able to                 quality of the              achieve the
complete the                achieving the               mission
mission                     objective
```

3. Were there any OPTIONS available to what you decided?
Was there anything else you could have done here, that you thought of doing right then?

4. What were you AWARE OF--KNOW--UNDERSTAND that led you to do what you said you did? How would I have recognized to do (what the AOB did)?

5a. What would have made you NOT DO this (this = #5)? What would have had to be different for you not to do this?

 b. Suppose this were the case...what would you have done then?

- -

Return to next decision on rankings list and repeat questions #1—5b.

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APPENDIX B

CONDENSED DECISION ACCOUNTS

Day 3
DP 3.1P

a. Reaction to Indirect ACC   TCI

: hesitated
: was trying to turn turret around
  to engage with main gun
: wanted enemy to cover up/button
  up
: operation was deliberate attack
  - movement checkpoints known,
    movement would be covered up to
    a point.
  - mechanic and tank platoon
    support, would all go on-line
  - one of these units would be
    base of fires for assault.

: got to call for indirect
: one member of platoon did,
  overrode AOB platoon leader
: could use 2 tanks in area for
  fire support
  - "at that range in the
    engagement area, could put max
    firepower with 2 tanks
: have to know whose on left,
  right flanks - who was covering
  me
  - Red 3 was on right, Red 4
    slightly behind Red 3.
: keep moving
: never call for immediate
  suppression on incoming
  artillery
: mask, let crew mask, inform
  commander and keep moving.
  - inform commander "I" has been
    observed, I was observing
    artillery and continuing
    mission.

Day 3
DP 3.3P

b. <u>Action at checkpoint</u>

<u>AOB</u>

: "had to tell" commander platoon
  was set
: platoon was continuing mission
: (heard himself say, "continuing
  mission" so just moved out
  - without waiting for code word)

<u>TCI</u>

: AOB was 200 meters <u>short</u> of
  checkpoint
: 'AOB didn't know what to do'
: knew at checkpoint ı would have
  to stop.
  - platoon was in overwatch for
    other (imaginary) platoons;
    they'd have to call set before
    platoon could move
: movement <u>speed</u> important
: too much confusion on radio,
  platoon members should stay
  off radio net.
: have to know what to <u>expect</u>,
  what terrain was.

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Day 3
DP 3.4P

Actions during Ambush Tactic

AOB

: was in offense exercises
  yesterday, decided to continue
  engaging enemy, take as many out
  as possible
: job was to suppress enemy, slow
  enemy down
: Alpha team and Charlie company
  are also in on this engagement
  - they're supposed to help slow
    down enemy advance
: once enemy at engagement area
  breakpoint, move back to
  subsequent
: only had 2 tanks, was
  shorthanded, were outnumbered

TCI

: enemies coming from front
: have to know whether fallback
  movement is covered.
: in a hasty defense, may have to
  run over the next battle
  position and circle back to it.
: keep commander informed.
: platoon sergeant tank disabled
  but can overwatch this position
: short one other tank — that
  crew should be destroying the
  tank and walking to battle
  position where they'd be picked
  up (all without being told)
: the op-order said fire 1 round
  then move back
: intelligence reports coming in,
  enemy movement this way

Day 3
DP 3.5P

Downed Tank - Commander Order to Pick Up the Men

<u>AOB</u>

: <u>always</u> follow orders, any orders
: if in this position, would cross kill zone to get the men
: don't want to waste any of "my" men's lives
: trust other platoons, one left/one right, would be suppressing enemy
: confusion over what is "Training" and what to do in real world
: Downed tank crew could have dismounted and come back on their own

<u>TCI</u>

: had already fired on enemy
: trying to fight all way back down to downed tank would have killed everyone who tried − platoon could be wiped out
: ignore order — tell commander "write them off as dead"
: down tank is in kill zone
: enemy movement = @ 500 meters from downed tank.
: better to write off one crew than risk (your) own platoon
: enemy knows I'm up here

Day 3
DP 3.6P

Actions on Primary Battle Position

AOB

: wanted everybody to get MAX
  amount training in/
: another platoon was already
  displacing (need to provide
  cover)
: if both platoons were to displace
  at once, both would be
  destroyed, cause no one was
  providing overwatch
: need to defend 'is sector, once
  enemy gets to breakpoint,
  going to fall back to secondary
  position. Once there,
  establish defense position and
  fight battle from there.

TCI

: fire few rounds then move back
: enemy was firing on this
  position
: don't stay in one spot too
  long--enemy will get a fix and
  put massive fire on the position
: this whole area is battle
  position
: do what is necessary to stay
  alive
  - back up, move forward, etc.

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Day 3
DP 3.11

Actions on Displacement (timing and choice)

AOB

: "SOP", taught in classroom
  Rule: when enemy in or beyond
  killzone then displace
: forward observers in (already
  pulled back)
: had to cover own move, use
  platoon sergeant section to
  overwatch
: spot reports of enemy movement
  forward
: got to get spotrep out to
  commander
: Saw white star cluster, time to
  go
: op-order said — when enemy in
  engagement area at breakpoint,
  displace

TCI

: enemy at 2 places
  - 1 platoon of BMPs and platoon
    T72s
  - 2 platoons T72s
: have to engage —take out as
  many as possible
: timing — when enemy exited
  engagement area, get spot report
  to commander on enemy's second
  location and get off battle
  position
: enemy was close (spot reports)
: 1 friendly platoon in area of
  enemy was probably overrun —
  this platoon was last to
  displace
: another platoon was already
  displacing

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Day 3
DP 3.21

Actions during engagement (contact)

AOB

: platoon on line and firing
  ('figure, 4 tanks x 3 sabot
  rounds each for 1 enemy platoon')
: op's in (already pulled back)
: could move up, expose turret to
  obsure engagement area
: enemy were (had) to be dead

TCI

: the platoon leader's wingman
  fired by himself, didn't wait
  for platoon, ineffective
: gave position away
: number of enemy platoons in
  area, from above
: spot reports coming in, got to
  relay to commander
: Need to watch own main gun, get
  gunner oriented to engage
: driver should be backing down on
  his own, moving to alternates
  - tank commander could help by
    just giving directions e.g.
    "15 yards to left"
: can just back down and come back
  up
: must prevent enemy from key in
  on you/your position

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Day 3
DP 3.22

Actions on Displacement

AOB

: was in a hurry, things had gone
  bad before
  - made mistakes in spot reports
  - made mistakes in positioning of
    tank
: wanted to get there and do it,
  not thinking about how
: road on left too open, would
  expose tank/platoon
  - was a boundary, was not going
    to go over the road or past it
: (AOB went straight over top the
  hill and got killed)

TCI

: initial approach, good use of
  covered and concealed
: movement through valley between
  2 hillocks on top of battle
  position
  - exposed flank and showed grill
    doors to front
: should have gone around battle
  position and come back to battle
  position
  - use ridgeline as cover forward
  - tell driver to move quicker
  - could use smoke
: possible to move straight over
  top but have to be quick
: enemy probably coming up behind
  me
  - know enemy gunners at least
    good as me, would be able to
    engage me
: terrain: low ground to the east
: know
  (rule: never enter battle
  position from front - always
  want to enter from flank or
  rear. Don't want enemy to know
  exactly where you're going)
: IF you pull straight up on
  battle position and turn around,
  enemy knows you're there
: IF you use side of battle
  position, enemy might not know
  where you're going to stop —
  might think you're going on to
  another ridgeline and they might
  expose themselves
: pullup from side or rear so
  - don't give position away
  - don't draw fire

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Day 3
DP 3.31

Use of Indirect While Displacing

AOB

- : thinking about getting down low, so couldn't be seen by enemy
- : keep main gun oriented toward enemy
- : get men/platoons off battle position to subsequent
- : wait for platoon sergeant section to be on road to subsequent before calling indirect
- : enemy was advancing slowly, not quite 1 kilometer per 5 min
- : try to stay alive,
  - fight the platoon

TCI

- : enemy can see clearly this position
- : enemy routes good for speed
- : smoke already a preplot
- : enemy still close (probably on friendly sister platoon)
- : enemy would advance to this position,
  - had been fired on from here,
  - would come straight over top
  - could see entire route platoon was displacing
  - would be grill-doored
- : have to approach subsequent from front, have to run over top (leave self open)
- : call for indirect on first battle position
- : may destroy enemy coming up on this position
- : need to check status of second platoon (are they alive and covering my retreat)
  - may call second platoon myself
- : both first and third platoon displacing at same time
  - enemy could advance unhindered unless second platoon slowed enemy down
- : keep gun oriented toward enemy

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Day 3
DP 3.32

Formation at Battle Position

AOB	TCI
: wanted to keep control of platoon	: gunner cannot move tank up by relying on sights - leaves main gun exposed
: wanted visual sight of them and forgot about front	
: could see tank on right, but one on left was on a hill blocked by bushes	: should stop in hide position. Make sure platoon on line and in hide position
- knew he was there but couldn't see him	: move up to turret down and assign sectors of fire then move to hulldown
- wanted to know where he was, have to assign sectors of fire, have to know what he sees	: have to split engagement area into 3 for surveillance/engagement
: wanted space between vehicles, prevent bunching up	: engagement area is only commander's best guess for main enemy advance
: no good berm to front to pull into or behind	: don't forget flanks
- couldn't tell where to stop	: main enemy avenue of approach is high speed avenue
- terrain: gentle slop of hill, a few shrubs	: check out battlefield
: it was already time to be in position	- don't want to go to hulldown immediately—IF a large body of enemy tanks there
: (AOB pulled up on line with platoon, exposed the tank and died)	: call in "established"
	: don't want platoon to just drive up (individually)
	- if one gets there first, 25% firepower forward, 75% back
	- move everyone together in case anything there, can give platoon fire command, all fire at once

Day 3
DP 3.41

Formation on Battle Position/Location of Battle Position

AOB

: terrain flat
  - artillery from enemy danger
: could see far, engage
: good hull downs
: scout force (screening force) in
  front
  - no obstacles can be used cause
    scouts have to come back
    through
: could have chosen better
  positions but maneuvering in
  open, (artillery danger)
: only holding the position until
  main force (friendlies) sets up
  - only 1 platoon against a
    battalion, we're outnumbered
: when enemy is fired on, they'll
  go into bounding, and have to
  slow down
: we were in bounding yesterday and
  took 4.5 hours to go 3000 m
  - if enemy slows down, can set up
    a deliberate defense
    against them

TCI

: time was limited, only 1/2 hour
  to get established (no time for
  deliberate occupation—
  deliberate occupation takes at
  least 1 hour, hustling)
: common went out on platoon
  leader tank, had to switch (some
  confusion)
: covering force will engage
  enemy, screening force will not)
: intelligence report, armored
  column moving in this direction
: an OP already withdrawing
: would have done everything AOB
  did but a little quicker

Day 3
DP 3.52

Formation at Battle Position (platoon coverage positions for engagement area)

AOB

: thought had 4 tanks in platoon, planned to drop off 2, go to position and wing tank to go on, positioning on platoon leader
: platoon sergeant section already on line when I pulled into position
  - didn't know platoon leader wing tank down, until TCI said
: was looking at trails, for good positions for platoon
  - didn't care which tank was where at this point
: still thought had 2 tanks on right
: hasty defense - only 40, 50 minutes to get all established
: platoon down low enough, could fight from there

TCI

: pull up in center, don't choke platoon
  - give hand and arm signals to place rest of platoon
: ridgeline was our battle position
  - further east, ridge gets lower and into woods
: road on west side is boundary
: further east, goes down into valley--don't want to put tanks down in low ground (far left tank could cover part of battle position from a position in valley, but don't want to do that because of limited field of fire)
: past road on west, dense woods. Don't want a tank on far side of road. If displacing this tank would have to come over top of road and be exposed
: the width of battle position determines position
  - if no good position in center, move to right or left of center

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Day 4
DP 4.3P
Response to Delay in Requested Indirect Fire

AOB

: first report of enemy was
  fleeting, didn't get a good look
  at them
: knew enemy was out there,
  couldn't get a good shot at them.
: enemy was moving
: artillery was not too chancy
  (wasting direct fire, giving away
  position)
: could have called for it sooner,
  quicker
: artillery would make enemy button
  up.

TCI

: could have coordinated with fire
  support to get indirect "at my
  command" beforehand
: if platoon waited longer, would
  have to fight longer, and
: terrain to cross when leaving
  that position was open -
  possible loose 1 or 2 tanks from
  platoon sergeant section to
  enemy fire
: because he waited for indirect,
  enemy moved all the way to
  breakpoint without being engaged
: "Rule": if you can't get
  indirect fire then use direct
  fire."

Day 4
DP 4.4P

Actions on Displacement (Timing)

AOB

: was concerned with engaging one
  enemy tank seen
  - was trying to formulate platoon
    fire commands to do this
: enemy moving through, about to
  roll over primary battle
  position
: going to call for smoke to cover
  displacement

TCI

: waited too long to request
  displacement
: enemy was already at breakpoint
  when call was made - should
  have called when enemy was 100
  meters in front of breakpoint
: should start moving before
  commander gives permission
: enemy was moving quickly, would
  have called earlier (saying
  enemy was at breakpoint, while
  enemy was in front of it)

Day 4
DP 4.5P

Use of Indirect

AOB   TCI

: vehicles in a stalemate, enemy vs   : at battle position
  friendlies   : 3 friendlies available
: friendlies in good defensive   : enemy location
  position; enemy not moving enemy   : 2 enemy destroyed, engaging 2
  and pinned down--can't move   more
  without going in open   : continue to call for artillery
: can't get a clear shot (MILES   - indirect, then
  obscured)   - adjust fire shift (quicker)
: having trouble getting artillery
: could see 1 enemy very clearly,
  but can't engage (MILES
  obscured)
: wanted to defeat enemy, take some
  out (main gun)

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Day 4
DP 4.11

Avenue of Advance (choice of Route)

AOB

: map recon showed east route
  better
  - more covered and concealed
  - could sneak up on enemy
: looked over terrain
: was in this general terrain
  couple days ago (in gunner's
  seat)
: terrain for enemy
  - good position on a hill for a
    defense, a side of a hill
  - only 2 good areas where the
    enemy could set up well
  - and both positions covered more
    of the middle of axis of
    advance, not sides
: terrain: west side boundary was
  a road, too open
: control of tank rules: "
  Leadership teaches, gunner and
  loader run the tank so platoon
  leader can take care of platoon

TCI

: center was wide open
  - could only use it if being
    chased by another tank
: from enemy direction, terrain
  passable if wooded, not too
  close
: enough low ground to work west
  - use tree lines to screen
    movement — cut of part of
    battlefield
: expect wing position his tank in
  relationship to platoon leader -
  in this case, not enough room
: taking westside, would obscure
  S. part of batt. field
: enemy could put platoon on enemy
  side, but unlikely — too open
: would never have taken center
  route
: road out there (on w.) natural
  obstacle, could be mined
  - also, enemy could overwatch
    it, I would have to go overtop
: highest terrain on enemy's side
: Known enemy op's location, gave
  limited view to the W (treeline)
: if unknown enemy strength, then
  go W through trees
  - But enemy has 2-T62's, so go
    enemy for better fields of
    fire
: platoon was not dispersed behind
  platoon leader—were told to do
  so
: platoon was easily seen

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Day 4
DP 4.12

Action on Contact

AOB

: wingman spotted tank, gave spot
  report
: report relayed to commander
: terrain: looked but platoon
  leader had different engagement
  area sector
: gunner picked up tank
  - platoon leader moved main gun
    himself
: enemy came across ridge and
  skylined himself
  - platoon leader gave platoon
    fire command
: op-order: 2 tanks in engagement
  area
  - platoon leader rejected first
    thought to fire, only one tank
    seen
  - reconsidered, enemy tanks will
    not be solitary
  - must be more out there
: platoon leader was in middle of
  platoon, could see every platoon
  tank
  - had good command and control
    could see who was backing up,
    moving to hide
  - if commo jammed, could give
    hand and arm signals
: terrain: flanks covered by
  woodline, front gave clear shot
  at enemy, only avenue was
  straight over hill (skyline) IF
  enemy that close, platoon would
  be displacing
: indirect fire: called for
  immediate suppression
  - could/should have used fire for
    effect

TCI

: trigger point is 2 enemy tanks
  in engagement area
: should have prepped platoon to
  fire anyway
  - once enemy in engagement area,
    should commence fire
    as a platoon; 1 tank alone
    firing would give away
    position
: from map, know where engagement
  area extends,
: know range of main guns
: engagement area in this case
  went beyond visual contact from
  this position
: when enemy was sighted, enemy
  was somewhere in middle of
  engagement area. Fire
  immediately, stop advance
: if more enemy then platoon could
  engage, get spot report to
  commander to move from this
  position
: IF spot report sent instead of
  engaging enemy first, gives
  enemy time to advance on
  position
: terrain: enemy can get into
  east woodline, stay covered and
  concealed all the way to platoon
  position. Once enemy sighted,
  time for action

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Day 4
DP 4.21

Avenue of Approach (choice of route)

AOB   TCI

a first right   A and B 180 degree turn in woods

: route gave good view to center   : to get out of woods, you can
: enough trees to break up tank   - go straight (E side)
  outline, not enough to obscure   - go angled (W side)
  field of view   : going 45 degree (angled) would
: going further into woods would   lead to edge of woodline
  cut off sight of battle field   : terrain channelized movement
: wanted to come out of woods and   - all ducks in row
  not be got off guard   - couldn't use staggered column
  - wanted good distance FOV   : got to keep going forward
: from National Guard unit: don't   (south)
  go over boundaries (further into   : keep platoon informed (from map)
  woods)   : cut through woods, to enemy side
: didn't think of calling commander   and cross road
  to request permission to go   - only op's, not that much
  across boundaries   firepower
: thought: training was to see what   - knew general location of op's,
  you could do with what you had   so could watch for them
                                              : know what would be good
  b second right   positions for enemy tanks --
                                                - enemy positions not good on
: wondered if this was correct   east, probably not there
  direction   : trees would cover part of the
  - should I go around   move
: don't want to crest hill   : after crossing would stay to
: thought I could go around   west, trees would cover
: terrain: rolling hills (forward)
  - thought could cut across road
    quickly, work way back through
    valleys
: hope to cut quickly over road
: terrain smooth in this area, need
  to move quickly
: TCI turned down route (90
  degrees) (depression, throw
  track)

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Day 4
DP 4.22

Actions on Contact (maneuvering to alternate fire positions)

AOB

: were assigned this position, "not much choice"
: pulled up too high first time, (TCI: "back down" suggestion)
: present position: clear shot for 3000 meters EXCEPT for little valley, big enough to hide tanks
  - enemy tried to use this valley to approach
  - NOT going to engage over 3000 meters anyway
: entire position covered
: terrain: flanks covered by trees, lake and trees
  - only access to rear
: platoon formation real close, 25-30 meters apart
  - supposed to be 100-150 meters apart
: battle position not large enough to spread tanks out
: each platoon tank had berm to front
: road on left
  - open area, enemy could engage tanks using road
: couldn't see platoon tanks across road
: priorities were making sure commander informed, using artillery, giving platoon fire commands

TCI

: after first engaged, move to alternate   .
  - good enemy gunner could destroy platoon leader tank if no move made
: no movement at all on battle position
  - wasn't engaged yet but no reason to sit and watch
: can't see entire engagement area, don't know where enemy is
  - don't know if enemy ready to engage
: could use indirect but danger of obscuring own platoon vision
: when not moving, tank becomes a pillbox
  - no better target than a pillbox
: should move around so many times enemy would think multiple tanks there
: not much terrain on position to move around on, but 2 or 3 other spots to move to
: have to back up
  - give enemy idea tank moved from that spot
  - then can move back up to engage
: could give signature from main gun, and still effectively engage
: if (platoon leader was enemy) on offense, then think opponent dug in somewhere - most likely on high ground to overwatch
: platoon on high ground
  Rule: whoever gets to high ground first has advantage over adversary
: enemy expects platoon to be on high ground

Day 4
DP 4.32

Actions on Displacement (choice of Route)

AOB

: from recon, routes chosen for
  platoon, self
  - never saw road finally taken
: road taken obscured from battle
  position
: hill in front, road went to right
  around it
  - didn't know where it went,
    could see far enough around it
    that it could have extended to
    second battle position
: there were 4 roads from present
  battle position to second battle
  position
  - far left, 2 in middle, far
    right
  - far left goes higher
  - middle routes bumpy, will need
    driver to go slow
: planned to take right middle
  path. Both left and right middle
  routes were parallel
: wing tank (of platoon leader)
  followed on the platoon leader's
  displacement
  - lucky, platoon could not have
    seen route once platoon leader
    had gone far along it (wing
    original position was directly
    behind, screened by trees)
: platoon leader left at 30 seconds
  ahead of everybody in platoon
: enemy was about 10 kilometers
  away
  - from scouts' report, marked
    enemy location and movement
: commander called, 'enemy moving
  along (planned) axis'
: platoon leader thought platoon
  had at 20 minutes before enemy
  arrival,
  - can set up platoon sectors of
    firing
: platoon sergeant section would
  have to take far right lane, no
  other choice route
  - section would be exposed going
    over top

TCI

: use smoke to cover displacement
  - good, cause enemy so close
  - bad, if enemy further away
    (not this case) because smoke
    would tell enemy the platoon
    was moving from this location
: smoke would - slow enemy advance
                - obscure vision
                - can't engage
  platoon on movement
: coordinate route choice with
  other AOBs
: either East route pretty good,
  using gunner for surveillance,
  and terrain depression for
  maneuvers
: driver would select route, in
  general direction of tank
  commander choice
: only enemy sighted had
  maneuvered to west
  - platoon leader section should
    go East
: platoon leader section already
  on east side
: wouldn't worry about low ground
  as much, just move quickly
  - more covered and concealed
    west, still would use east for
    speed

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Day 4
DP 4.51

Avenue of Approach (choice of route)

AOB

: heard report of enemy op (no
  location given/recalled)
: thought of calling for smoke, but
  couldn't get through to FIST
: east side was a good covered and
  concealed route
  - did a visual recon and choose
    this route
: decided to just "jet across",
  move quickly without smoke
: report of enemy OP was the MAJOR
  reason to take enemy route

TCI

: west route is treelines, good
  cover and conceal, good high
  ground
: east is low ground, gives good
  cover (trees)
  - can sneak through trails there
    but don't know where enemy is
    "could lose or gain"
: lay smoke to cover the move
  across open ground before hit
  east route
: can advance further with enemy
  route then west (have to come
  out in open on west)
: got to know where you expect the
  enemy to be (on or near far
  ridgeline)

Day 4
DP 4.52

Avenue of Advance (choice of route)

AOB

: had reconned, moved through this
  terrain
  - had found routes 14 days
    previous in "Mounted Land
    Navigation" exercises
: had been pouring rain last 4-5
  days, did not think of rain
  impact on terrain
  - thought terrain would be same
: if terrain route okay for platoon
  leader tank, good enough for
  platoon
: good covered and concealed from
  LD/LC
  - would cross road (on initial
    route chosen) behind enemy
    battle position
  - all the way to west side was
    covered and concealed
: first west turn, after backing
  down, channelized routes
  - more difficult to get back east
    UNLESS went completely back
    behind LD and turned around
: one other trail to left (east)
: "hoping maybe further down to the
  west trail would be able to get
  back east"
: did not notify commander of est
  trail movement of platoon
  - commander could have switched
    missions, so no change in
    overall company plan

TCI

: should notify commander of down
  tank (that blocked first route)
: tell commander 'cannot maneuver
  east at this time'
: terrain layout - should have
  backed up and gone East
: if stay on original route and
  try to cut east around down
  tank, would throw a track
: if stay on more west route
  - route chosen by AOB - an alert
    defense (enemy) would kill the
    platoon coming across (over
    top) of hills on that route
: have to cross hill on west route
  and get back down to low ground
  to advance
: East route, after stream, is low
  ground, lowest point in that
  area to cross to other side of
  road without being seen
  - enemy on top of hill cannot
    see platoon going across
: terrain - ridgeline of trail AOB
  first choice. platoon is high
  up, stuck up there
: difficult to tell from map that
  more east route existed
  - mostly tank trails down
    through there, tank trails not
    usually on map

Day 4
DP 4.61

Choice of Formation during Movement

AOB

: it's "SOP"
: pretty much automatic, go into
  bounding upon contact with enemy
: terrain: in woods, tight
  maneuvering
  - lost sight of 1 tank
  - lost a little bit of command,
    cause if you can't see you
    can't direct
: platoon sergeant wing was fired
  on
: have to fight platoon first
: ridgeline to southeast--good
  cover and conceal position (to
  bound to, for platoon leader
  section)
: (platoon leader did bound first)

TCI

: terrain: hills, deadspace and
  low ground in front
  - would make me bound at point
  - really can't go much further
    this way (without bounding or
    having an overwatch)
: good avenue of approach for
  enemy this way--straight down
  middle
: ridgeline would be a key
  overwatch position for
  friendlies--also prevent enemy
  from getting there
: have to see who's in better
  position to overwatch the bound
  - could call platoon for fix

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Day 4
DP 4.62

Action on Contact

AOB

: were driving along, saw puff of
smoke, heard a "bang" and saw
puff of smoke
- we were being fired upon
: should have given "contact,
action front" and started to send
spot reports
: all this time, loader was
looking, saying "there's a tank"
- I was trying to lay main gun on
it
: gunner fired didn't get a hit
: big ridge ahead and road leads up
to it
- ridge not final objective, only
a checkpoint, final objective @
1-1/2 kilometers beyond ridge
: platoon leader section ran into
heavy section of enemy on east
side
- enemy was pointing west
- platoon had slight advantage of
flank shots on enemy
: saw 2 of 3 enemy tanks on East,
eventually the one west
- 2 eastside of road, one
westside of road
: enemy on ridgeline platoon had
set up on that morning, but on
other side of road
: don't understand why enemy set up
there
- west side has higher ground,
more dominating view
: concentrated on platoon duties
vs. tank duties
- don't want to loose control of
platoon like other AOBs going
through this class,
- knew had to give contact before
action drill
- had "a laundry list of things
to do that other people weren't
doing"
: taking route after down tank
"screwed up" my perspective

: looking at map, knew enemy would
be on hill 69
- so would bound platoon around
enemy to get to objective
: heard 1 spot report, then
another - thought this was enemy
force
- first thought enemy had moved
cause they had seen platoon,
didn't expect enemy there

TCI

: fight tank first
: commo was down, so ignore for
now and engage enemy
: gunner scanning too high, need
to pull main gun down
: when first see enemy, give
contact report
- it commo out, then platoon
would need to key off my
actions (where pointing and
shooting)
- when a break in action, then
try to fix radio and inform
commander
: enemy too close, no time to
switch tanks (with wing tank to
use radio)
: mission was movement to contact
- platoon had an opportunity to
destroy the enemy, cause enemy
oriented wrong way, opposite
the platoon. Such opportunity
only comes once in a while
: all enemy gun tubes pointed away
from us, so kill enemy; make up
for radio another time
- enemy were in cross fire
pattern toward west
: platoon in traveling overwatch,
- 2 tanks in front side x side
- 2 tanks in back side x side
anyone in platoon can give
contact report, to get platoon
in a firing position

Day 4
DP 4.71

Use of Indirect Fire (pre-plan for fire on schedule)

AOB

: call ahead of time, so smoke
  dissipates well enough to cover
  move
: wind direction was east, so call
  for drop on west a little
  - a minute or 2 before you get
    there
: have specific times to get to
  certain places
  - have to make those times

TCI

: don't have to call for smoke and
  don't need arti, cause we gotta
  go through there
: when smoke is dropped, a give
  away for movement in the area
: If you don't drop smoke and
  enemy is in good defensive
  position then can pick off each
  tank
: happened a while back, an AOB
  did not call for smoke and
: enemy picked off each tank

Day 5
DP 5.21

Reaction to Contact (obstacle)

AOB

: give spot report
: get platoon in good hull downs
: get engineers to blow bridge
: knew obstacle was a choke point
: just wandered up into the kill
  zone right in front of it
: had already coordinated with
  white for smoke

TCI

: hilly terrain,
: scanning head each time crest a
  hill
: saw flank of tank
  - facing direction we came, gun
    tube over tack deck, light
    flashing
: white had reported and killed
  vehicle
  - would call my platoon's
    attention to it
  - sometimes when you see one
    dead tank maybe more around
: by not noticing dead tank,
  possible for first 2 platoon
  tanks being killed
: as crest a hill, go into a mini-
  hulldown--slow down a little
  - take time to look around from
    turret down
  - don't go straight up and over
  - have gunner scan real quick
: enemy tank must have been killed
  during displacement
  - didn't expect enemy tank right
    there
: have to spread platoon out for
  better fields of fire
: back down into hulldowns
: call for engineer support

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Day 5
DP 5.22

Actions on Displacement (formation and route)

AOB

: mission to defend the position,
  then ordered to fall back
  - didn't have commander
    authenticate, was a mistake
: went ahead and moved out, with no
  idea of where we would be
  setting up on next battle
  position
: this is platoon's third time
  through area, other AOB's had
  same idea of direction to move
  - before, I was mainly the
    gunner, so didn't pay much
    attention to terrain
: didn't give order to displace
  right away, was looking at map
  trying to locate platoon
  - commander called back, anxious
    to get platoon moving
: radio reports kept coming in,
  didn't know what to do
  - reports about enemy movement
    and location, which impacts on
    displacement routes
: commander called, wanted platoon
  to move now,
  - so just told platoon to move,
    needed to get moving
: spot reports of screening force
  withdrawing
  - scouts reported enemy movement
    but didn't know how to
    incorporate this information
    into a unit movement plan
: got everybody moving, same time
  - no overwatch
  - wanted to withdraw in sections,
    with platoon leader first and
    platoon sergeant covering that
    section
    If enemy there, they could've
    "overrun" the platoon because
    no overwatch
: was hoping that, after seeing 1
  platoon tank following, others
  would follow
  - terrain didn't look the same
    coming from the other direction
  - didn't look back to see if
    platoon following

TCI

: needed map recon
: get platoon altogether and give
  same plan and overlay
: had plenty of time to do a hasty
  occupation, didn't use it
  - could look for alternate
    positions
: 2 other platoons in the area and
  in position
  - commander informed platoon
    leader that the others were
    withdrawing
  - platoon must overwatch other
    platoons withdrawal
: need to pass on information to
  platoon that "2 platoons
  moving, we're overwatching. On
  order, displace 'sidecar'."
  - if platoon doesn't know about
    other platoons moving, may
    open fire on them by accident
    OR, if platoon did move out
    and other 2 platoons saw the
    tanks, may have opened fire on
    the platoon
  - platoon sergeant on the radio
    net but he may not understand
    commander, have to inform
    platoon of correct information
: need to be conscious of other
  platoons, or where they are with
  respect to one's own platoo

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Day 5
DP 5.31

Avenue of Approach (choice of route)

AOB

: had visual contact with sister platoon (white)
: farther west too open to enemy view
  - could be seen and could be engaged
: had made this movement before, was platoon sergeant that trip--used exact same route
: in op-order, to move east and that white would overwatch

TCI

: on map, noticed objectives were in middle
  - could come around,
  - on low ground
  - end up on big hill
: move any further west, would run into white
: have to make sure white doesn't shoot us by mistake (might think it's enemy on flank)
: East route canalizes platoon
: platoon has to come back across from W to E
: have to keep checking forward view
  - don't crest hills so fast
  - use thermal sights to scan for enemy, if there, could zap
: call white, let them know I'm moving
  - so white gunners don't shoot me
  - I'm changing directions, heading their way
: platoon a little bunched up
: look for antennae, trees about the size of a tank sticking out, muddy ground or
  - a whole lot of trees and something not in the right area
  - sometimes glare

Day 5
DP 5.32

Formation on Battle Position

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AOB

: platoon leader tank in good
  position,
  - could observe enemy forward
  - had clear engagement area
    access
  - but poor maneuverability (mud
    on the hillside caused sliding)
: 1 tank facing west
  - our unit came through west on
    attack before. IF only 1 tank
    were there, enemy could overrun
    and pick off the platoon
    flanks
  - could have put 2 tanks facing
    west and shift fire of rest
    of platoon to support
: let other tank commander's pick
  battle position locations
  - platoon had been through here 3
    times before, so relied on
    what they learned.
  - had to speed things up, cause
    platoon was behind schedule
: during terrain walk planning,
  positions looked okay. But when
  tanks moved up to the positions,
  muddy ground and hillslope made
  maneuvering difficult
: could have moved platoon leader
  tank to right for better
  traction
: terrain a little too hilly, bad
  mud traction
: platoon sergeant and wing were to
  the left, good hull downs--but
  few trees--might get silhouetted
: platoon were a little too close--
  indirect fire damage
: didn't occupy whole battle
  position
  - left the east (right) area
    open, because lots of trees
: an OP out, to survey engagement
  area
: 1 tank on far left had best
  position to overwatch entry/exit
  into the engagement area
: shifting to other positions might
  expose whole platoon

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TCI

: don't do a deliberate occupation
  with just a screening force in
  front
  - screening force too small to
    repel any sizeable enemy force
: assign supplemental fighting
  positions
  - concerned about flanks cause
    of wooded area up there
: tank dispersion was ok, fairly
  good
: could request permission to turn
  hasty into deliberate
  occupation. Against doctrine
  when only screening force in
  front.
: platoon positioned on dominant
  terrain in this area
: Put OP's out, if time

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Day 5
DP 5.41

Avenue of Approach (displacement Route)

<u>AOB</u>

: concerned about blowing bridge
: didn't know where enemy was
: wanted to get to subsequent
  battle position and get est'd
: platoon and driver knew where to
  go
  - had pointed out route in recon
: didn't track tank movement, till
  we were way out in center
  - was getting grid coordinate for
    engineers
: terrain marshy ahead
  - can't go straight
  - have to left (east)
: enemy not on my trail, won't be
  shot
  - thought enemy not at bridge
  - thought enemy not over ridge
    (yet), still behind it
  - nobody there
: move quickly to covered and
  concealed route 50 meters away

<u>TCI</u>

: called, "bridge to be blown"
: <u>if</u> enemy out there, they could
  see <u>across</u> the highway
  - bridge just slows them down,
    it's only way to cross
  - can still see and fire over
    bridge
: take East route—best covered
  and concealed all way down to
  battle position
: terrain all fairly low ground
  and wooded - enemy couldn't
  recognize positions
: during recon, could see over
  bridge from first battle
  position
  - enemy had to come over this
    battle position, so they could
    see too

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Day 5
DP 5.51

Reaction to Contact

AOB

: nothing but smoke (from East)
  - tank thermal sights broken
: artillery came in, had to mask
: jumped back up, saw 2 tanks,
: tried to get gunner to engage
  - he wasn't hooked up yet
  - tried to get gunner to engage,
    tapped him on shoulder
: tried to get driver to back down
  - he wasn't hooked up yet
: looked up, one puff of smoke from
  enemy tank - we were dead
: been in this defensive position
  this morning
  - had platoon leader and platoon
    sergeant 50 meters apart
  - called in artillery and smoke
    this morning

TCI

: were in fairly good hulldowns,
  - most of turret exposed
: 2 enemy tanks moved into
  position on far ridge - zeroed
  in on this tank
  - both fired (saw flash)
: would have driver back down, go
  left or right
: already made contact with enemy
  earlier, so knew they were out
  there
: gun tubes (of 2 enemy tanks) are
  on my present position
  - need to change
: could see diesel of enemy tanks
  moving into position

Day 5
DP 5.52

Avenue of Approach (choice of route)

<u>AOB</u>

Route had been used before (we)
held a defense there and enemy used
that route, seemed pretty effective

: terrain - only way to get to
  position trying to reach, only
  route low enough in whole
  battlefield to cross without
  being seen that much
: had to get from East to West
: terrain had good cover and
  concealment
: knew the area pretty well
  - when got to bottom in real low
    part, had to look around and
    decide (if road above taken,
    would be too high)
: was looking for low ground, that
  was important thing at the time
  - move out fast, get to other
    side without casualties
: started out with 5, dropped to 4,
  then finally just 3 tanks for
  exercise
  - only (platoon leader section -
    1 tank) + platoon sergeant by
    himself
  - formation was SOP (platoon
    sergeant on left, platoon
    leader in middle, platoon
    leader wingman on right)
: platoon leader wingman was in
  command in this area before
  - wanted him in middle when in
    column
: mission - move by bounds, but
  altered this to move more quickly
  (more like traveling overwatch),
  no time to shoot, just move
: day before, students mentioned
  seeing parts of tanks through
  the trail
  - the probability of enemy seeing
    1 of the 3 tanks on the trail
    was being seen high
: terrain - no left route, trail
  too muddy, would toss a track
  - left trail better, lower, leads
    to opening at end
  - commander said, don't use (had
    to reevaluate route selection)

<u>TCI</u>

: terrain: route was in a deep
  depression, high ground on all
  sides
: call for smoke at end, to cover
  move from east to west
: enemy on defense on hill 53
: keep maneuvering (AOB stopped to
  look around)
  - can see low ground before you
    enter trail
: if area looks good to maneuver,
  use it EVEN IF no tank trails
  lead through it
: don't know what's up ahead in
  either direction (side, front)
  - keep momentum this helps
    maintain command/control,
    messes up plans for enemy to
    engage from their positions
: after LD, have to go East
  - use traveling overwatch
  - keep covered and concealed
: terrain ridge before route
  chosen is open - move quickly
  through it
  - high ground, could use smoke
    to obscure enemy vision even
    though this would let enemy
    know I was coming
  - if enemy, they're watching
    these type of areas
  - enemy would expect platoon to
    use this area
: after LD, know enemy contact
  possible
: ridge high enough to look for
  enemy, <u>but</u>, enemy would be
  watching, shooting
  - go deep into woodline
  - trails exist through there
: offense: find enemy first, not
  let enemy shoot first
: <u>IF</u> there were infantry in front,
  they would clear woods to
  allow tanks to move through

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Day 5
DP 5.01

Actions on Displacement

AOB

: too much confusion
: had to redirect
  - used radio
: platoon was set up too far
  forward, wrong battle position
: had already plotted platoon
  placement at second battle
  position
  - the position was in op-order
: stopped tank, be sure platoon
  understood

TCI

: would have used radio to contact
  platoon
: would not have stopped
  - when displacing, objective is
    to get to secondary as fast as
    possible
  - to set up for enemy approach
: IF bridge not blown, then enemy
  would have been even closer if
  platoon leader stopped
: pulling up in wrong battle
  position could throw the whole
  company operations out of
  sequence
: it's also possible that not
  enough time to get all way back
  to second battle position, have
  to get hull down wherever, fight
  from there
: the platoon's position was near
  pre-plot
  - could call for artillery on
    themselves by accident
: knew platoon was in wrong
  position, from their distance to
  McCraken Springs
  - needed to be 3-400 meters away

Day 5
DP 5.62

Avenue of Approach (choice of route)

AOB

: wanted to use earlier ridge for
  cover,
  - tank moving too quick
  - wanted to turn right (after
    ridge) but depression too big
    (TCI "NO")
: other side of route has high
  ground behind
: present route leads to open area
  in front
  - after leaving woods and popping
    out like that, enemy needs
    time to move gun, acquire
    platoon
: if enemy watching, moving quickly
  prevents acquisition
  - low ground cover (small ridge
    in front)
: if continue on original route,
  more continuous low ground,
  leads out to marshy area
  - dropping down to low ground
    keeps front armor towards enemy
: had to direct driver: stopping,
  slowing down
  - not supposed to stop (but
    platoon in low ground, so it
    was okay)
  - keep offense momentum
: moving so quickly, little
  direction given to platoon
  - platoon knows where/what
    platoon mission is
: ridgeline cover deceiving, not as
  good as route through the low
  ground
: far ridgeline still could see
  platoon, could engage
: this morning, AOB's came straight
  down, didn't use routes (east -
  west), got killed
  - platoon got this far without
    being killed, felt good
: enemy probably still could see
  - thought enemy would be sneaking
    around; waited for them
    enemy is OPFOR, not classmates:
    would not be on line on
    battle position (won't be able
    to see them)

- would be in good hull downs,
  maneuvering around
- thought they'd be further
  north

TCI

: low ground between ridges to
  use, heads west
: platoon has to come back north
  and swing west to use it
  - exposes part of platoon, maybe
    just tank commander or
    loader's head
  - need to keep main gun oriented
    toward enemy
: must be concerned about flanking
  during this move but not forget
  about enemy location
: this next route was only route
  available from trail the platoon
  was presently on
: must use speed
: watch battlefield to front
  (south)
: enemy not on west flank

Day 5
DP 5.72

Actions on contact (failed to
continue to engage)

AOB

: saw enemy tank moving along
  ridgeline (left of center)
: jeep parked along side platoon
  tank on left
  - don't know why, maybe tank dead
  - main gun not traversing on this
    enemy tank to engage it
: try not to get flanked
  - by allowing enemy to get by
    would create hole in company
    formation
: engaged enemy tank, one round,
  - immediately turned gun back to
    hilltop (right of center), my
    "primary position"
: enemy kept moving, then the jeep
  came over to platoon leader's
  tank
: would not have engaged if left
  tank were alive
  - concerned about fording area in
    front, low ground
  - thought enemy were in there,
    and on right-center front
: third platoon of this company
  formation were sweeping on left
  side, first platoon on right
  - not concerned about enemy
    movement that way, should be
    covered by third platoon fire
    zone
  - also, tank on left should have
    engaged
: enemy were moving on ridgeline in
  the open for a little while
  - had time to see it, look at
    platoon leader wing, look back
          and engage
  - platoon leader wing had given
    spot report about the enemy
    tank

TCI

: spotted BMP moving on ridgeline
: by time engaged, BMP was on way
  off ridgeline
: BMP only @ 200 m away
: gunner engaged - then said BMP
  dead
  - but BMP was still moving
: should shift platoon leader and
  wing backdown, use low ground
  to move back
  - to cover side where BMP was
    and far ridgeline,
  - watch for that BMP
: need to keep high ground to the
  south, reorient the platoon
  both East and North
: use speed, movement should be
  quick
: leave platoon sergeant in
  position,
  - had picked up enemy earlier,
    leave him to engage enemy in
    that direction

Day 5
DP 5.82

Movement to Objective

AOB

: needed traveling overwatch for
protection
- only 1 tank exposed at a time,
2 others covering; all 3 not
hit at once
: terrain higher than other side
(where the platoon came from)
: traveling overwatch quicker than
bounding overwatch but still safe
: contact possible
- in instructions, "if no contact
by checkpoint #11, then stop"
- no contact, so I stopped
: terrain (on way to position): was
hilly--don't know if getting
skylined or not
: thought front was higher ground
: once in that direction, cannot
see behind because of trees
: tank moving very fast
- hard to react, "by time I
thought of something, I was in
a different location and it
didn't apply"
- if moving slower, can plan
ahead (wasn't planning ahead
'cause of speed)
- no time to look head 200 meters
(was already past that range
'by time told driver "go here"
or "go here")
: on 2 previous attacks, was gunner
- couldn't see much
- don't remember if other AOBs as
platoon leader were stopping
("course, we died on the other
one(s) too")
: by stopping in a depression,
couldn't be seen--make enemy
think platoon is turning around
going back other way
: also, stopping would allow me
time to think

: just a screening force in front,
was withdrawn already
: this platoon (platoon leader's)
was first in company movement of
3 platoons
- needed to be safe
: need to get there as fast as you
could because the faster you're
moving, the less likely you're
going to be hit

TCI

: ensure platoon in traveling
overwatch
: make sure trail section knows
what platoon leader is
maneuvering against
- must overwatch sweep up to
checkpoint #11, depression is
on that way
: moving first would give time to
look position over
- deploy platoon to provide
security over ridges, which
were all around
: use good speed

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Day 5
DP 5.92

<u>Formation on checkpoint (Battle Position)</u>

<u>AOB</u>

: platoon come up on line and got into good overwatch position
: platoon leader wanted to scan
  - know where enemy was
: "we had been working together 5 or 6 days
  - everybody knows people on left watch left, on right watch right
  - unless like yesterday, tank on right watched across and front cause we couldn't see over the hill"
: "all these guys have good heads on their shoulders, I assumed they know to keep eyes on their respective areas"
: everybody was looking at far hill
  - "tunnel vision"
  - enemy came up on flank and destroyed platoon
: only 3 tanks in platoon, can't spread them out far enough to cover same area as a platoon of 5
: thought enemy was on short slope in front of hill, that's where I was watching

<u>TCI</u>

: was supposed to secure depression at checkpoint #11
: horse shoe depression, with open side towards woods
: move in fast, have to come across a ridge to get to it
: need to move to hulldown once in the depression (<u>NOT</u> into a hide position)
: need to have trail sections overwatch move into depression
: have to prevent enemy from coming up on flank
  - need to tell other tank commanders to overwatch east on east and west flank on west
: on east, enemy can use woodline to advance
  - platoon tank on east flank is not in a good position to overwatch
: terrain: many ridges, dead spaces behind, in front
  - enemy could use to maneuver in
  - could come from flank or rear, using covered and concealed terrain

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Day 6
DP 6.11

Actions on Advance (choice of covered and concealed position)

AOB   TCI

: while elements on hill, not   : poor room to manuever, poor
  engaging   overwatch
: platoon wasn't engaging   : 2 platoon tanks had gone far
: big depression to left   enough ahead that contact would
  - looked like good hulldown   be harder to coordinate
: wanted to put platoon position   : depression was a crater, about
  there   50-60 feet deep
: could see white   : on hill, enemy could pick them
: vegetation not supporting a move   off
  on line with them   - platoon leader gave up a flank
: moved to depression, turned   shot, then showed grill doors
  around to look and platoon was   when moving to the crater
  gone   : platoon was in hulldowns,
  - they turned right, didn't   farther up--never got on line
    follow   with platoon leader
  - "totally lost control"   : if platoon leader killed,
: in Arizona terrain is different,   firepower down to 75%
  tanks can spread out maybe 3/4   : should have called for 4 element
  mile apart   report (one tank of the
  - never been in a forest before,   platoon)
    as platoon leader   - find out where platoon is
                                        : should have moved east,
                                          maintaining good contact with
                                          platoon
                                        : didn't know where 1 tank was
                                        : didn't know where enemy was,
                                          want to be aggressive
                                        : would have tried to find that
                                          tank
                                        : it's better to go towards enemy
                                          than away
                                        : might have called wingman, to
                                          find out what happened to 4
                                          element
                                        : didn't see smoke or fire, don't
                                          know if 4 is alive/dead

Day 6
DP 6.12

Avenue of Advance

<u>AOB</u>

: enemy was not right there
  - if so, would be exposing self
    needlessly
  - enemy was further removed and
    orders received "was in line
    with that"
: had a bumpy ride before this
  point
: many tank trails, need to orient
  oneself on the map
  - map vegetation isn't that
    accurate
: terrain - in a depression, can't
  see more than the hill in front
: started to go straight up over
  hill
  - thought "no danger, or very
    little contact there
    because commander said move to
    next displace point".
  - move in most direct manner
: didn't think about it, direct
  route my first inclination
: kept platoon behind me on the
  trails
  - at one point, platoon was going
    to pass me to take a higher
    route
: had lost some momentum earlier,
  got turned around
  - but were moving in the right
    direction

<u>TCI</u>

: ridge in front high enough to be
  engaged from (by enemy)
: have an overwatch element
: low routes exist
: should back down, use as much
  speed as possible, use low
  routes
: know where next checkpoint is
: was already 200 m in front of
  checkpoint #4--which is 500-600
  meters in front of #9
  - if he was further south, he'd
    be behind #4 and 5-600 meters
    in   front   of #9
: was a mine field at #9
  - if enemy sets mine field, some
    enemy there to watch it and
    direct fire into it
  - mine field slows advance,
    stops platoon
  - terrain supported the enemy to
    engage tanks in the mine field
: if tank pulls straight over top,
  the enemy can see--know
  platoon is coming
: use low lying routes to sneak up
  on enemy

Day 6
DP 6.21

Use of Indirect (HE and smoke as pre-plot)

AOB

: knew more than likely where enemy
  was
: had defense exercise there 3 days
  ago
: terrain: ridge behind hill was
  lower, "only place enemy could
  be"
: HE/smoke artillery calls pretty
  standard
  - no DPIC, hangs in trees and
    platoon needs to go that way
: can goof up "call for fire" at NG
  unit, nobody knows how to use it

TCI

: got call from commander to cover
  white's move w/indirect
: quickest way is fire for effect
  - 2 rounds from 6 guns, burst
    radius of 300 meters
: want to make enemy button up and
  screen white's move
: shouldn't have waited 5 minutes
  to plot white's move
: white's location only 600 meters
  from where they were going
  - maybe 2 minutes
: white called back in 30 seconds,
  "at position" so white wasn't
  where they said they were
: couldn't use direct fire, would
  be ineffective to cover white's
  move
  - be sides, no smoke rounds left
    in the tank
: good overwatch positions

Day 6
DP 6.22

Technique of Movement (reject 1 checkpoint, move on to next)

AOB

: came up through woodline, first
  stop was at first open area
  (ridge)
  - saw better position one
    ridgeline further and moved to
    it
: new position overwatched a
  broader open area
: didn't get lost getting there
: looked at map, saw a few
  ridgelines
  - can't tell (what they were
    like) until you get there
: weren't supposed to be at
  checkpoint #3
  - but platoon were bounding
  - always better to send platoon
    in sections (this case, platoon
    sergeant section)
  - platoon sergeant section may
    otherwise just keep moving,
    perhaps come up short of
    position platoon leader wants
    them to be at
: first ridge position could see
  some of the area wanted to
  overwatch
  - also a dip in front, and
    another ridge ahead
  - might as well get closer, if
    not giving up protection
: after TCI prompt, sent platoon
  sergeant section all the way to
  checkpoint #2
: tanks move pretty quick, crew
  gets bounced around a lot
  - before you know it, you cover a
    set of hills
  - hills, as termed in this area,
    are sometimes pretty small
: time stops; any movement is
  forward movement
: point on ridge chosen, had no
  clear trails leading to it
  - other positions have trails,
    can recognize best route

TCI

: white (sister platoon) destroyed
  at bridge
  - platoon must provide own
    overwatch
: pick covered and concealed route
  on east side
: rolled through checkpoint #11,
  to get to next ridge, tried to
  get hulldown on top of ridge
: cannot get hulldown on that
  ridge
  - need to back up
: out of position, past checkpoint
  - can't establish an overwatch
    from that position
: should stay at #11, pull platoon
  sergeant section through to
  checkpoint #3
: in current position--possible
  enemy destruction of platoon
  leader which leaves platoon
  leaders section open to attack
: enemy would have to know the
  hulldown positions between #11
  and #3

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Day 6
DP 6.31

Actions in Advance (platoon control: formation)

AOB

: road, vegetation to left
: too open on right
: road going straight across, but
  wanted to go left
: wanted rest of platoon to move
  behind me (TCI "no", vegetation
  too thick)
: road meant platoon sergeant might
  have followed in that direction
  --terrain too tight
: didn't use radio
: my NG unit: radios don't work,
  get used to hand and arm signals
: thought of going 1 terrain
  feature to the right--if whole
  platoon could be pulled in there
: present position "super
  concealed" (AOB stopped in this
  position, to put platoon on line)

TCI

: AOB pulled on line with platoon
  sergeant, went from offense to
  defense
: where first pulled up, were in
  open
: pulled backdown, for cover and
  concealment
: rest of platoon (only 2 other
  tanks) were already in hulldowns
  they chose
: platoon leader not controlling
  platoon
: road in front, bends around and
  disappears
: trees, bushes to the flanks
  - forward to right open area
  - depression in front of road
: would not have come down this
  way--30-50 meters back could
  have cut to right,
  - more room to manuever, cover
    more in this right sector
: saw enemy displacing (tanks not
  dead, gun tube over back deck
  because enemy is in that
  direction)
  - knew enemy was going this way,
    just not how far
  - sometimes, enemy will pull up,
    wait, and shoot when
    friendlies come into range

Day 6
DP 6.32

Platoon Control During Bounding
(sent platoon sergeant section, did
not check progress)

AOB

: part of overwatch technique
  - get set first, ready to
    overwatch and protect other
    units
  - other units move up. using
    covered and concealed routes
: other moving units have
  responsibility for choice of
  routes
  - "can't drive their tanks for
    them"
  - "sometimes, can give direction
    e.g. 'bound along river'"
    but they say should not use
    radio too much
: thought platoon sergeant section
  took same routes as platoon
  leader
  - that east area too open
  - could see from map
: platoon sergeant section took
  some time to do the movement
: platoon leader thought they were
  jockeying for position
: play the problem as platoon
  leader does something, platoon
  sergeant does a related action
  which they're supposed to know
  how to do

TCI

: In op-order, platoon sergeant
  should know what mission is
: platoon leader told platoon
  sergeant section to move without
  telling them where
: should have had platoon sergeant
  section come up to platoon
  leader position
  - had platoon leader go on to
    next position
: had platoon sergeant section on
  the move
  - the platoon sergeant had to
    come through
    the underpass, past mine field
    with no direction
  - platoon sergeant could
    continue down to white's
    position (sister platoon)
: need to control platoon movement
  · halt platoon leader section on
    #3, push platoon leader
    section on to #2
: IF enemy sighted while platoon
  leader on #3, would push platoon
  sergeant through on west down to
  #2 while platoon leader engaging
  enemy
  - would allow platoon sergeant
    section a flank shot on enemy
: platoon leader wing sitting
  higher on ridge, good overwatch
  position
  - this lets platoon leader
    backdown to move west (down to
    #2) while being covered

Day 6
DP 6.42

Actions on Contact (misidentified
sister platoon, tried to engage)

AOB

: thought the tanks were M60's
  - only got a glimpse of a
    gunbarrel
  - only time to react
: had no idea white was in area
  - thought they were farther up
    ahead
: had heard on radio white having
  problems
  - but platoon was following white
    and had given white enough
    time to move up
  - white was supposed to pass
    further over
: "Given fraction of a second, I
  thought better safe than sorry
    .. when you're told to go into
    sector where enemy is,
    anything you see could be
    considered the enemy cause you
    don't have time to sit there
    and figure it out."

TCI

: trail chosen to move on put
  grill doors toward OP (and
  enemy)
: had to direct driver which route
  to take
  - driver was waiting for
    directions
: terrain: trail bent around back
  and went up a hill
  - this exposes tank
: terrain: low ground on the
  trail to orient towards front
: going up the hill. saw vehicles
  in front
  - identified as white
  - had just made radio contact
    with white, telling them to
    push through to #2
  - white had to roll back to get
    into route to push to #2
: have to make contact with white,
  give them directions, let them
  know (who you are)
  - could be mistaken as enemy by
    white as well
: white should have radioed that
  he was coming back toward
  platoon's area

Day 6
DP 6.51

Avenue of Approach (choice of route)

AOB

: wanted to stay far left as
  possible
: low ground this way
  - came this way as driver before,
    saw general layout
: not a lot of room to manuever
: knew this route existed, from AOB
  class talking among themselves
: one route to right would've gone
  too far into woods, could get
  channelized there
: route would lead out into center
  of approach to overpass, with
  good cover--bushes and stuff

TCI

: good speed and orientation on
  route
: knew which holes to go in and
  out of
: platoon was slow in following
  platoon leader
  - lost time 2 times, waiting for
    platoon (2 minutes in each
    area each time)
: another platoon was overwatching
  the move, so could use good
  speed
: no enemy contact made so not
  supposed to use radio
  - would have anyway, to tell
    platoon to move more quickly
: other trails, but not with same
  cover and conceal as this one
: very seldom will an AOB move as
  quickly as this
: trail would allow coming out
  within firing distance of enemy,
  - enemy defense all set-up, no
    chance to pick up tank until
    platoon was right on top of
    them
: really good covered and
  concealed, all the way up to
  enemy position
: good recon, use of jeep, allowed
  platoon leader sight of these
  trails, possible enemy access
  points

Day 6
DP 6.52

Actions on Contact

AOB

: was coming up on a terrain
  feature "I know"
: I knew I was moving platoon in
  right direction
  - when I saw the hill, it was
    expected
: there was somebody on the hill
: was a non-tank vehicle (HMV or
  jeep)
  - thought it was a controller
    vehicle
  - then thought the hill was an
    observation point and the
    orders were to suppress fire
    (there) or determine if nobody
    there
: had a clear view of vehicle, was
  in a clearing an open view
  spot from platoon position
: knew that nothing was supposed to
  be there
  - knew white wasn't in area
: gave order to engage

TCI

: spotted vehicle
  - immediately put tank into
    hulldown and put main gun on
    target
: give action drill and engage
: give contact report to
  commander,
· destroy vehicle
: get set on checkpoint #4
: would be faster, (speed) keeps
  you alive
: didn't waste time
  - know friendlies aren't
    supposed to be there
  - enemy have M60's, main gun (on
    '60s) can take a tank out

Day 6
DP 6.61

Avenue of Approach (choice of route)

AOB

: knew red elements (sister
 platoon) was to right
: didn't worry bout enemy, but
 still a possibility
: speed urgency
 - a left turn was hidden by dirt,
  would be slower using that
  cover
: should let driver choose route
 - hard to control platoon and
  choose route
: platoon was on-line, good command
 and control
 - if we had to stop
 - if we had a breakdown,
: platoon was still covered

TCI

: used good speed
: look ahead, (see where you're
 going to)
: terrain--road was steep, went
 straight down, looked formidable
 but still passable
: platoon still slow in following,
 had to wait for them to catch up
: very seldom does AOB use this
 route. I've never seen AOB use
 it, North to South. The other
 way, South to North, I've seen
: would have waited for platoon
 - a critical turn coming up
 - if AOB went over the hill
  without rest of platoon in
  sight, would have lost someone
  for sure
: platoon was being overwatched on
 East
: (Red) also sent a spot report
 about obstacle
: could see red position in front
 - could have: --gone through
         :   --gone up to
         :   --gone around
        red
 position
: since red in lead, enemy was
 probably keying on them already
 - by using extreme East route,
  become a surprise to enemy
: smoke was out front, only going
 to be effective for so long
 - need good speed
 - route would allow getting
  there on time to take
  advantage of the smoke

Day 6
DP 6.62

Preparation of Battle Position (no recon of second battle position)

AOB

TCI

: didn't think I had enough time to
  properly scout out my 2 back-up
  positions
  - the other AOB tank commanders
    had gone over the same terrain
    with me earlier and they were
    in the same status I was
: left the assembly area a little
  after 3, had to be on position by
  3:45
  - had to prepare 3d position and
    recon the second on the way
: drove through the first one on
  the way--was less familiar
  with this position,
  - wanted the other tank
    commanders to have the
    opportunity to see the position
: were real familiar with second
  battle position so drove past
  it, so that
  - could get to primary battle
    position with plenty of time to
    get into a good defensive
  position by 15:45, commander's
    orders
: got to first battle position @
  15:31 or :32, which left 15
  minutes to get set

: time problem - had to compensate
  by just skimming the positions
  while pushing through
: operation was basically simple,
  - sounded more complicated than
    it was
: coordinate the platoon, make
  sure everyone has the same map
  and overlays
: assume enemy is there
  - have to insure semi-hasty
    occupation at each battle
    position. to check dispersion
    of tanks on battle position
: insure that there are routes
  back from each battle position
  to the subsequent positions
  - must make tank commanders
    rehearse routes back
: continue to secondary position,
  establish a hasty occupation
: let commander know "have
  completed preparations"
  - so that commander can send
    scouts forward
: scouts will screen platoon
  movement forward
: coordinate with guard at
  obstacle, let platoon know what
  the password or signals were
  - you never know which tank is
    going to be first back to the
    obstacle depends on difficulty
    of route back from primary
: move up to primary battle
  position, do a hasty occupation,
  then call "established" to the
  commander
: most important is terrain, then
  enemy actions
: can "war game" enemy options,
  but cannot take for granted
  enemy will do what you thought
  of
: need total dispersion on battle
  position, have to depend on
  entire front
  - if somebody next to me falls
    apart because of the situation
    then enemy will flank me

Day 6
DP 6.71

Avenue of Approach (technique of movement)

AOB	TCI
: have to back down from position to cut East	: first position wasn't bad
: was quicker to back down six feet instead of ten feet	- could call commander and inform him about position
- enemy was out of area	: commander called, said establish platoon on <u>west</u> of hill and in form when done
: thought I was on checkpoint, but was too far west (TCI prompt)	: red might have come through this position
: depression behind, with trees	: when backing done, gave flankshot cause he <u>stopped</u> in a flank position
: was 99% sure enemy was gone	
: thought could take the short route and be set up quickly	- should use more speed
: backing further down would take platoon leader section same way but take longer	: was on friendly side of slope of hill
: kinda <u>know</u> where enemy is	- could use speed to get established
: couldn't see wingman, asked for fix	: enemy situation changed
- when wing "popped his head up", knew platoon leader wing was in good position	- can't locate enemy anymore to front
	- have to back completely done
	: use low ground behind, to back down, to get west
	: platoon sergeant section could overwatch this move
	: don't know if enemy is to west
	- moving west would not allow bypass of any enemy there
	: would take about same amount of time to back <u>completely</u> done and move

Day 6
DP 6.72

Formation at Battle Position

AOB

: after passing under bridge, knew
what was on east side
- so wanted platoon to bear that
way
: got up to ridgeline, deployed
platoon online
- platoon leader in middle,
platoon sergeant on left and
platoon leader wingman on right
: about 3 days ago, went back and
forth across the same terrain 3
times
- was pretty familiar with it
: platoon had good fields of fire
- gunner knew where his sector
was and what we were covering
: from commander's suggestion, had
platoon use cross-fire sector
engagement pattern
: picked center position to have
good field of fire down the
middle (thought could cover
engagement area from here)
- section on left had good
positions and far right tank
had good positions
- tank (wing) to the immediate
right did not
: put platoon online, directed
platoon sergeant section to where
I wanted them--they could easily
see my directions, were 2 closest
tanks
: did not direct platoon leader
wingmen, it was their decision
where to be positioned
: small ridge and vegetation
semi-obscured rightmost section
field of fire
: this was my sector of
responsibility (we were the
second platoon of the company
operations)
- 2 other platoons covering
flanks but
- expected (an armored company)
enemy to come down middle (our
position)
: enemy has to come over this road,
will be exposed while doing so
- can get clear shot at them
: could pick up enemy before road
and on the road
- no other access route

- woodline access, but platoon
has good fire zone there

TCI

: road access by enemy had been
done before, AOB's had never
seen the enemy go to other side
(west)
: platoon leader anticipated where
enemy would come
: no control of platoon, platoon
leader just moved into a
hulldown on the battle position
and let other tanks get into
their own positions
: need to back down into hulldown
in a hasty
- 2 platoon tanks did not
: suppose to come in behind
position
: need to observe the battlefield,
to pick platoon positions
: platoon position only covered
1/3 of total battle position
: platoon position was more an
ambush on the road, rather than
a hasty occupation
- fields of fire directed west
and eastern woodline
: platoon leader wingman should
let platoon leader know "no
field of fire in this position"
- platoon leader can still
override the wingman anyway
: platoon leader was set up for
frontal contact--instead,
- would want flank shots on
enemy, so
- should move further west
: should move platoon sergeant
section much further west (to
cover the entire engagement
area)
: a smarter enemy would have
destroyed platoon in its
original position
- here, the enemy are students
so they constantly do the
expected
: from the original position, the
platoon may get 1 or 2 kills
- not enough to slow enemy down
- latest, pick up enemy on the
road
- this was far into engagement
area
- thought would be able to get
them before enemy moved across
: terrain-good berm to front,
woods around

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Day 6
DP 6.72

Formation at Battle Position

TC1 continued:

- when platoon backed down, would
  take thermal sights to pick up
  tank signatures
: creek and cliff to east, limits
. placement area for platoon leader
  wingmen
  - platoon leader moved into
    position for own tank, left
    wing tanks squeezed
  - platoon leader right wing only
    30-40 feet away ("too close")
  - Unit SOP, platoon leader wing
    has to be there
: in woods, can be closer; in open
  area can be further apart
: major concern was to be on time
  and in position
: didn't know when enemy was coming
: started out 20 minutes behind,
  just got into position and
  "everyone else go off me"

Day 6
DP 6.81

Actions on Contact

<div style="display: flex;">
<div style="width: 50%;">

AOB

: were in a column and made contact
  with enemy
: gave platoon fire drill and
  engaged
: platoon leader tank in good
  position but platoon was behind
: terrain did not support putting
  platoon online (to engage)
  - flanks all high ground but none
    to front
: only platoon leader tank could
  engage
  - only 1 or 2 enemy tanks, so
    platoon leader engaged
: backing down, after firing,
  noticed platoon position
  - couldn't move platoon
  - up to individual tank commander
    to make best of their
    positions
  - terrain wouldn't support 4
    tanks forward
: saw 1 enemy tank, "kinda got
  tunnel vision"
: couldn't go around
  - high ground, would be open
: couldn't go right
  - would give flanks shot after
    platoon leader engaged and
    backed down
: knew enemy was displacing south
  - possible that enemy was just
    backing down but knew
: enemy was AOB class
  - knew how FTX was run

</div>
<div style="width: 50%;">

TCI

: platoon leader maintained too
  much visual contact with own
  platoon
  -watching where/how they were
   moving
  - only need to check (a second
    or so)
: need to keep watching enemy,
  steadily engage
  - to get good enemy information
    to commander
  - platoon was moving into
    position, from action drill
: (by backing and watching
  platoon) gave time to enemy to
  look up and pick off a tank
: position was poor to spread
  platoon out
: should have been quicker
: keep firing, regardless of
  whether enemy is in target
  access range
  - put rounds down range to made
    enemy button up, duck. This
    gives time to get better
    platoon hulldowns
  - would have used tank commander
    override to fire main gun, not
    wait for gunner
  - then move into hulldown, check
    platoon position
  - then send spot rep to
    commander
: move up and keep fighting
: platoon leader had a good
  hulldown
  - move anywhere else, be shot
: terrain prevented platoon
  dispersal

</div>
</div>

Day 6
D⌐ 6.82

Action on Contact (failed to breakoff contact)

AOB

: difficult to coordinate fighting
  the tank and fighting the platoon
    - spot reports
    - getting platoon to do something
: sometimes gunner could not see
  target and platoon leader did not
  lay gun on for him
    - tank is in danger
: had previously shifted platoon
  sergeant section west, had just
  gotten into position when enemy
  attacked
    - platoon sergeant section no
      good routes back (3 tanks)
: first report from platoon leader
  wing
    - M60's seen and am engaging
: platoon leader did not expect
  M60's
: saw some M1's in hulldowns
    - must be covering enemy advance
    - called into commander spot
      reports
: saw more and more tanks rolling
  over ridges
    - were real close, coming toward
      platoon
    - gave platoon fire order
: picked up 2 M1's and engaged them
  before they fired
: kept engaging, enemy just kept
  coming, got too close
: commander order "not to get
  decisively engaged"
: called "displacement"
    - but enemy at 5-600 meters in
      front, moving toward platoon
    - not enough time to displace,
      get into covered and concealed
      to second battle position
      routes before enemy can reach a
      fire position
: need time to turn tanks around,
  and head back out of range
: saw enemy coming down road in
  middle

TCI

: enemy did attack on road as
  anticipated but advanced quickly
  too far south
    - had passed platoon breakpoint,
      had no alternative but to
      become decisively engaged as a
      matter of survival
: if dispersion on battle position
  were better (more west), then
  earlier engagement possible
    - make displacement automatic
: operation was "space for time",
  a delaying action
    - poor observation allowed enemy
      to get almost on top of
      platoon
: the occupation itself indicated:
    - engagement at greatest
      distance then
    - breakpoint automatic
: position had limited observation
: terrain: was a bowling alley
    - only logical enemy advance
      route
: over to east, visibility (trees)
  so limited that if enemy, would
  be bayonet time
: if enemy on that east side,
    - no way to get platoon off
      position - enemy would still
      overrun platoon
: heard radio reports of west
  flank platoon displacing
    - would leave west flank open
      for enemy
    - even if platoon could stop
      enemy attack, enemy on west
      could attack the flanks (heard
      reports of enemy in west)
: had to leave
: first reaction was "here comes
  the enemy, let's fire him up,
  see how many we can get" instead
  of "each tank fire 2 rounds,
  then displace

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Day 6
DP 6.82

Action on Contract (failed to breakoff contact) continued·
/··/··
: map: road is 1000 meters away,
  knew early part of road is fading
  quick traveling
: could see enemy outnumbered
  platoon heavily
  - kept coming
: platoon fighting a good battle,
    inflicting casualties

Day 6
DP 6.91

Use of Indirect (call for smoke for sister platoon)

AOB   TCI

: had already coordinated this   : thinking about commander, not
  call, pre-planned with sister   just own platoon
  platoon (red)   : platoon in overwatch
: knew underpass was chokepoint,   - saw red hit obstacle location
  only access across highway   - knew red's situation
: talked to sister platoon, asked   : when commander told red to back
  to be informed when they were   down into hulldowns, knew red
  near overpass   in trouble
  - platoon leader would call for   : have to get something out there
  smoke   to help red
: heard radio report of sister   : can't use direct fire
  platoon at obstacle, was probably   - red in Line of Sight (LOS)
  a minefield at overpass   : need to cover red's move to
  - commander callback "need more   hulldown
    specific grid"   : would do same as AOB
: sister platoon did not call   : this is first AOB I know of to
  platoon leader, no warning or   do this support and quickly
  time to get coordinates for smoke   : red was scurrying to get into
: knew sister platoon there,   hulldown
  - better get some smoke out to   : underpass is deadly location for
    cover them   anyone there
  - better get some smoke to cover   - enemy has sights on anyone in
    breeching operations   that area, will destroy
: sister platoon leader having   : red is exposed there
  trouble with map coordinates to   - would be caught trying to get
  commander   to underpass
: was afraid sister platoon too   - high ground on both sides of
  close to overpass (for smoke   underpass
  artillery rounds)   - backing up to another hulldown
  - but smoke not that dangerous   there is another 150-200
    and   meters
  - no HE called for to blow bridge
    so
  - probably okay to call for smoke
: heard sister platoon location as
  500 meters before bridge
  - called for smoke 400 meters
    after bridge so not to blind
    the tank commanders there
  - put smoke as a screen

Day 6
DP 6.92

Actions on Displacement

AOB

: displacement went well, but
  didn't check if platoon
  sergeant's section was following
: "was concerned with getting
  platoon leader section back"
  - assumed platoon sergeant would
    follow directions
  - assumed platoon sergeant had
    heard the displacement command
: thought platoon sergeant section
  was using covered and concealed
  routes
  - so it was okay not to see the
    section moving on covered and
    concealed routes
: gave command to displace by
  sections (sidecar - platoon move
  not covered)
  - was at 50 meters away from
    first battle position when gave
    platoon sergeant section
    command
  - knew enemy was close to them
    also
: displaced all way back to
  obstacle (1000 meters)
  - heard platoon sergeant wing
    call, "asking to displace"
: was trying to get my tank to
  choose a route, watch platoon
  leader wing, watch for enemy, get
  ready to go through obstacle,
  call commander with reports
: didn't think about platoon
  sergeant section until got
  through to second battle position
  and nobody there

TCI

: good use of low ground
: gave "side car"
: after obstacle, gave up covered
  and concealed and took high
  route (open to acquisition) for
  speed
  - should use treeline on east
    side
: had to displace under pressure
  - enemy close
  - platoon vulnerable, need to
    maintain covered and concealed
    have to assume enemy still on
    platoon heels
: going through underpass
  (Engineer obstacle), don't know
  about enemy position
  - have to maintain covered and
    concealed go east through
    woods
: if enemies were slowed down
  earlier in engagement area, then
  could take high speed low cover
  route
: little communication with rest
  of platoon
  - expect them to use covered and
    concealed routes NOT
    necessarily same ones as
    platoon leader

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Day 6
DP 6.101

Actions on Contact

<table>
<tr><td>AOB</td><td>TCI</td></tr>
<tr><td>

: as soon as I rolled up, saw enemy tank next to trees
  - just looked at that 1 tank
: put gunner on it, fired 2 rounds before enemy could respond
: gave platoon fire command
: backed down, come back up
  - TCI said "look around"
  - then saw another tank next to first
: shot second tank
: first enemy tank near a tree and a brim of earth
  - good position, good camouflage
  - but was out of the ordinary, against background
: did not direct own platoon
  - other AOBs to use own judgement
  - would take too long to direct them
  - wouldn't be able to perform other platoon leader functions
: don't remember much else
  - was working on map for enemy location grid coordinates
: never looked up to see where platoon was
  - knew someone to left
  - don't know if any to right

</td><td>

: move tank around, make sure enemy tanks do not put the crosshairs on my tank
: initially, only platoon leader on position to engage, rest of platoon not there yet
: the tank fired, backdown to get spot rep to commander
: would have done same as AOB plus

  - use artillery, call for indirect
  - since only platoon leader there for a short while, need to get enemy to duck, get heads down so platoon leader could sneak another look at enemy position and numbers and pick next spot to move to
: could only observe western section of objective
: terrain (trees) prevent full access to east
  - need other platoon members for observation there
  - enemy seemed to be there
: platoon still behind platoon leader, maybe 500 meters, trying to catch up

</td></tr>
</table>

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Day 6
DP 6.111

Action on Displacement (choice of route)

AOB	TCI
: hard to keep oriented when traveling backwards, keeping main gun towards enemy	: commander told platoon leader to displace
- see enemy come up over ridge	: whole platoon took same route
: route had good ear-marks	- more than 1 route out there
- from what could be seen, good cover through the trees	: platoon got bogged up, slowed down
- good cover from artillery	: enemy or trail
: trail ran all way back to subsequent battle position	: need to get established
: another fork on trail existed but immediately forgot it "because of heat of battle"	: sometimes have to trade covered and concealed routes for fields of fire
: was in the tail of the column	: sometimes have to realize this route doesn't work
- whole platoon was ahead of platoon leader	- still have to get battle position established
: other AOBS had tried other routes, this seemed best from discussion at time of op-order	: knew we were bogged up
: was surprised at how close trees were	- would set battle position up right there, then
	- locate my platoon
	- call platoon sergeant, inform that platoon leader field of fire limited
	: platoon sergeant was in good position for fields of fire and observation
	- would have to keep platoon leader informed of enemy movement
	: platoon leader had intercom (radio) keyed, couldn't hear platoon sergeant transmissions (spot reps)
	: with information from platoon sergeant info, would direct platoon, pull them into position
	- get platoon fired up to shoot
	: maybe never get to battle position
	: were 2 routes, one open, other covered and concealed
	: covered and concealed route probably the same one the enemy would take
	- I would go that way
	- looked at terrain while traveling that way

Day 6
DP 6.111

Action on Displacement (choice of
route) continued:

TCI

: enemy past breakpoint, not
  enough time to get back to
  battle position and set-up
: enemy had 4 tanks, saw diesel
  and dust
  - no smoke to obscure movement
: gunner could use 10x (as in:
  scope with a magnification
  factor of 10) scope to help
  identify enemy; has also thermal
  sights

Day 6
DP 6.121

Choice of Formation (technique of movement)

AOB

: wanted more fields of fire
- present position didn't offer much opportunity for suppression
: move quickly
- didn't waste much time
- good movement
: couldn't see platoon, where they were
- didn't know if platoon could see me
- if you can't see, can't guide
: can't use radio to find platoon
- have to listen for commander, others higher
: worried about avenue chosen to move up, it was open
- knew had to move fast
: another platoon member in front of platoon leader stopped, motioned for platoon leader to go back
- have to move fast
: looked at him to see if he changed his mind--but he was still looking away
- had to keep moving
: came down trail, thought my tank was too high (skylining)
- so backed down to small group of bushed "for a little concealment"
: thought enemy would come around this way
- didn't want to move over the hills here (up and down, might silhouette self, be engaged)
: one route led to a clearing, not secure from rear attack
: heard platoon fire, trying to engage enemy
: maybe heard some spot reps
: thought enemy was getting closer
- need to engage them now
- chose to move up there instead of keeping maneuvering

TCI

: enemy on trail
- need to get established but never oriented platoon
: if AOB looked to the right, could see some tanks of own platoon
: AOB too occupied with own tank
: never move forward in a battle position
: went straight over top of a hill to a hulldown,
- saw enemy, but never engaged
- backed down
- never gave fire command to crew
: moved tank back up, saw enemy and vice versa
- enemy shot and killed platoon leader
: platoon leader masked whole platoon by moving forward, they couldn't engage over his head
: platoon leader never knew where enemy was
- pulled within 100 meters and died
: if position bad, call platoon sergeant
- tell platoon sergeant to keep platoon leader informed
: platoon sergeant called, did try to do this but platoon leader wasn't listening
: enemy would use some trail as platoon leader (it is covered and concealed--I would)
: intel reps from commander gave approx enemy location
: could see diesel and dust, parts of tanks
- have to orient platoon that way
: 4 enemy tanks coming North to South

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APPENDIX C

REVIEW OF ANALOGUES

Review of Analogue Use

Day	Code	Analogue and Value

3 3.4P   Used previous day's platoon bounding exercise to
          hypothesize enemy's reactions to being fired on from a
          distance, and was right. The analogue facilitated.

3 3.41   Used previous day's mission to determine when to fire on
          enemy and then fall back. But the previous day was advance
          to contact (an offensive mission) whereas new mission was
          ambush and displace. The AOB became disoriented and allowed
          enemy to maintain contact during the fallback action.
          Analogue disrupted performance.

4 4.1   AOB remembered terrain from exercise a few days earlier, knew
          which was best cover and concealment route, and how enemy
          would be advancing. Analogue helped.

4 4.2   AOB used National Guard experience to resist crossing
          platoon sector boundaries despite the TCI's urging. Moved
          platoon into an open area where they were killed. Analogue
          failed.

4 4.5   AOB remembered terrain from earlier exercise, remembered best
          route. But it had rained, best route had become impassible,
          one tank lost. Analogue failed.

4 4.6   AOB remembered position from morning exercise using same
          terrain, knew would enemy would be, best uses of terrain by
          the enemy. Analogue facilitated.

4 4.6   AOB remembered classmates failing in radio protocol.
          Made sure to follow a "laundry list" of procedures, but
          became so engrossed he forgot to engage his tank and platoon.
          Analogue disrupted.

5 5.31   AOB had used route before, analogue facilitated.

5 5.51   AOB had been in same defensive position that morning.
          Analogue facilitated.

5 5.52   Other AOBs had been through area before, so cadet used
          them as a committee to plan route. Worked well, but failed
          when new requirement reached for leaving battle position.
          Analogue value was mixed.

5 5.32   AOB remembered area from before, when he had been
          attacking. Now on the defensive he placed a tank in the
          right spot to block an attack. Analogue facilitated.

5 5.32   AOB remembered terrain from 3 separate exercises. To
          save time he did not bother specifying specific positions for
          platoon. Analogue hurt him. The AOB needed to coordinate
          the routes to the positions, to improve safety and

communications, and to continuously assign sectors
of fire. Analogue disrupted.

5	5.52	AOB remembered terrain from a defensive maneuver, remembered a successful route through. Now on the offensive he selected that route and it worked. Analogue facilitated.
5	5.52	AOB remembered the general terrain layout from prior exercise, that certain dips did not offer good cover and concealment. He stopped the platoon to re-evaluate where the dips were. Analogue mixed. It helped in recognition but hurt because he should not have stopped.
5	5.52	AOB knew wingman was familiar with terrain from a prior exercise, solicited his judgment, used it to advantage. Analogue helped.
5	5.52	AOB remembered a classmate's discussion of a route chosen that had afforded 'glimpses' of tanks during movement. Something to be avoided during the advance. Analogue facilitated.
5	5.6	AOB remembered the morning exercise, where the previous cadet platoon leader chose a straight route that failed, and platoon killed. He chose a route to the side, and it worked. Analogue facilitated.
5	5.7	AOB remembered prior attacks, where AOB had stopped to get orientation and were killed. Analogue facilitated because cadet did not look further but pressed on.
5	5.9	AOB used prior drills where other platoon members set up good overwatch for each other without being instructed. Analogue mixed. Initial placement worked, but the cadet failed to cover their flanks. Platoon killed.
6	6.6	AOB remembered terrain from prior runs. The platoon movement to placement was behind schedule. Analogue mixed. Time pressure did make it unfeasible to do total reconnaissance, but AOB failed to point out some routes while on the move.
6	6.7	AOB remembered terrain from earlier exercise. Analogue mixed. AOB remembered his use of terrain, failed to consider other possibilities for enemy use of terrain, did not cover entire sector, prematurely settled on one enemy route as most likely.
6	6.8	AOB knew from prior use of terrain that enemy would advance quickly at one point.• Analogue facilitated.
6	6.12	AOB remembered from National Guard experience that radios were unreliable and chose to use hand and arm signals. Analogue hurt. Only platoon members in visual range could read signals. Platoon formation became disorganized.
6	6.22	AOB remembered prior experiences in spacing platoon.

Analogue hurt. Prior experiences were in Arizona desert, and AOB lost control of platoon in the forests of Kentucky.

6   6.32   AOB remembered prior exercise 3 days earlier, and identified probable enemy actions. Analogue facilitated—hypothesis was right.

6   6.32   AOB remembered National Guard experience where radio protocol not so important. Knew things were different in Regular Army, and concentrated on protocol. Analogue hurt. AOB concentrated on protocol, did not listen carefully to the content of the messages, received inconsistent information and did not realize it.

6   6.52   AOB remembered hearing others talk about a possible route in the advance and selected it, sight unseen. It worked, analogue facilitated.

6   6.92   AOB solicited comments from others in platoon about experiences with different routes through terrain. Analogues facilitated, selected an effective route.